THE LANCET.

VOL. I.] LONDON, SATURDAY, MARCH 16, 1839. [1838-39.

COURSE OF

LECTURES ON THE BLOOD,

AND ON

THE CHANGES WHICH IT UNDERGOES DURING DISEASE,

Delivered at the College of France in 1837-8,

BY

M. MAGENDIE.

LECTURE XXIV.

Theories of inflammation; explanation of its phenomena. German theories; effects of alimentation on the production of inflammation; obscurity of the causes of inflammation; its terminations and mode of treatment. Concluding remarks.

GENTLEMEN:—The bird into whose circulating system I injected four centilitres of dog's blood at our last meeting, has supported, without apparent inconvenience, the extraordinary change thereby induced in the nature of its blood. The fact is, that it now lives in part by the help of nutritive materials that had been elaborated for the nourishment of a dog; microscopical inspection of its blood has detected none other than ovoid globules, such as exist in all animals of its class. The result of our earliest experiments of this kind consequently appears to continue to be produced, and will soon, no doubt, take rank among the acknowledged facts of the science, according to this general enunciation:—globules differing in nature from those of the animal into which they are injected, are either destroyed or modified in such manner that none but normal globules will, after a certain period, be discoverable. It is unnecessary for me to impress on your minds the vast importance of this result.

In the course of these lectures, Gentlemen, I have frequently drawn your attention to facts valuable from their direct application to the practice of our art; I have submitted the medicines in most frequent use to an experimental and physiological analysis in respect of their action on the blood, and found, sometimes to my surprise, that the results were widely different from what would generally have been expected. You saw, for example, what is likely to be the consequence of the employment of tannic acid, of Rabel water, and of citric or sulphuric lemonade, as a means of arresting hæmorrhage. You learned that all these substances liquefy the blood, and you know what that signifies. I have recently had an opportunity of putting to the test one of the results of the series of experiments to which I allude.

I had a patient affected with severe uterine hæmorrhage; my interne and myself had vainly tried all the remedies habitually used in such cases, when we thought of employing the *ioduret of iron*. You remember that that salt promotes the coagulation of blood removed from the body. A drachm of it was accordingly dissolved in two pounds of water; the patient employed it as an injection into the vagina several times in the course of the day, and on the morrow the hæmorrhage had totally ceased. I do not, however, mean to conclude from this case that the ioduret of iron must be a sovereign remedy in all similar circumstances, but I am of opinion that our success in this instance shows the propriety of having recourse to it again,—and this, for my own part, I shall not fail to do.

I had intended, Gentlemen, to terminate the present course by a complete exposition of the doctrine of inflammation, but you will readily understand that to do anything like justice to such a subject, I should have much more than the time for a single lecture at my disposal. I proceed, nevertheless, to treat it as fully as circumstances permit.

You may have remarked that I avoid sedulously the use of the word *inflammation*, except when about to point out the erroneous notions it involves. Yet it expresses something. If its sole defect were to have been ill chosen, to have been based on incorrect metaphor, the repugnance I feel for it would be puerile, and more worthy of the pedant than the physiologist, but such is not the case. You know as well as I do, how erroneous are the theories represented by the word, and how various authors in different countries have laboured to add new fallacies to the already abundant stock.

Before recurring to these, let me briefly enumerate the principal phenomena that occur in the substance of tissues said to be inflamed. You can easily ascertain them for yourselves with the microscope.

In order to appreciate correctly the modifications that occur in the capillary circulation, it is necessary that we should first understand thoroughly its normal condition; otherwise we should commit no few errors, just as others have done before us. This small animal is tightly fixed to a plate of cork; and the eye, aided by the microscope, follows the course of the globules through the infinitely minute capillary tubes of the mesentery. Apply an alkali or any other chemical agent to any point of the membrane, and immediately the circulation is observed to stop there; nothing is thenceforth perceptible in that situation but an obscure and motionless spot, and around this the capillary vessels are swollen. It is evident that the blood which should have passed through the obliterated vessels, regurgitates into the neighbouring tubes. What I have now said of chemical agents is equally applicable to every substance which modifies the texture of the vessels, or the degree of compression of the liquids. From the moment a want of harmony between the diameter of the capillaries and the volume of the molecules of the blood is brought about obstruction supervenes, and then follow the appearances ascribed to inflammation. Let us next see into the consequences of the stoppage of the circulation.

Inasmuch as a greater quantity of blood passes in a given time through such vessels as remain free in their interior, those vessels contain a great number of globules, and their colour consequently becomes deeper. This explains to you why inflamed tissues redden; it may also happen that blood finds its way into vessels ordinarily traversed by white fluids only; of this you have a familiar example in conjunctivitis.

The increase of pressure exercised on the inner wall of the capillaries necessarily causes their dilatation. Their coats swell, fill a larger space than before, and give passage through their widened pores, either to the blood in substance, or to some of its materials. These phenomena of dilatation and extravasation produce more or less tumefaction of the part where they occur. The swelling reaches its maximum in the centre, for there all motion on the part of the liquids is suspended. At the circumference, where the blood continues to move, but in columns of larger diameter than usual, the swelling is less marked, and diminishes in proportion as we make our examination further from the inflamed point. Accordingly, you will remark that inflammatory swellings are generally conical, the most prominent point corresponding to the centre of the tumour, for there the obstruction is complete.

As the temperature of the body depends on the passage of the blood through the tissues, it is evident that it will increase in the direct ratio of the volume of the liquid. We have just seen that inflammation is accompanied by the accumulation of a greater quantity of blood than usual in the vessels, the animal heat of an inflamed part is, therefore, notably increased; this fact cannot escape the observation of any one who examines a part in that condition. The patient himself is conscious of the elevation of temperature. At the same time that the inflamed point is red, swelled, and hot, it becomes the seat of acute or dull pain, according to the nature of the tissue affected. Indeed, in the case of the ligaments, tendons, and cartilages, pain may be completely wanting, and its character varies exceedingly under different circumstances. The mode of distribution of the nervous filaments, their abundance or rarity, the presence or absence of an investing aponeurosis, explain the infinite varieties of sensibility observed in inflamed tissues. The nerves which ramify between the interstices of the different organs, and expand in the substance of their parenchymata, are compressed by the swelling of the vessels, and by the matters effused from their interior; it is they that transmit to the brain the impression of pain. It is possible, too, that the vascular coats themselves, according as they are, or are not, traversed by blood, become painful.

Inflamed parts frequently present unusual pulsations, whence it has been inferred that the vitality itself of the vessels is modified: the patient is conscious of these pulsations. But, I would ask, have the mechanical modifications undergone in this case by the local circulation been allowed their due importance? Whenever an artery is closed at one end, and so presents an insurmountable resistance to the passage of the fluids into the capillary rete, its coats support very considerable pressure, and dilate under each contraction of the heart. Now, this is the state of things in an inflamed part. The nerves, compressed at the instant each arterial pulsation takes place, transmit the impression to the brain; the phenomenon now alluded to is, therefore, physical in essence, though vital in its results,—the first cause of all the disorders observed is the obstruction of the capillary vessels.

In this way the analysis of the course of the blood in an inflamed part explains the true signification of the famous words—*dolor, calor, tumour, rubor*. The pain results from the compression of the nervous filaments by the obliterated or distended vessels; the heat shows that the blood passes in greater abundance into the neighbouring capillaries which continue to be permeable; the swelling is occasioned by the dilatation of the vessels, and by the extravasation of the materials of the blood; the redness de-

pends on the presence of an unusual quantity of globules.

Now, in all this there is not a word about *irritation*, or *organic contractility*, or *insensible sensibility become sensible*, or *spontaneous movements of the globules*; and, in truth, such explanations of the phenomena are utterly deceptive. There is one experiment, in particular, which is cited as conclusive, and has for centuries served as the basis of numerous medical doctrines. We are told that when the mesentery of a living animal is pricked with a needle, the blood flows to the injured point from all sides. Why should the currents of blood change their direction and become retrograde in some of the capillaries of the part? There must be some force that attracts them, and this a stronger force than that of the heart itself, inasmuch as the globules often move in the opposite direction to that in which the action of that organ tends to propel them. This newly-developed force is *irritation*. You have, by your experiment, *stimulated* a point of the membrane, perverted its vitality, and so drawn thereto the blood contained in the surrounding vessels; all these phenomena are the result of irritation. Ere long you see the tissues swell, redden, grow hot, and painful, and extravasation occur in the vicinity,—all this is the result of a new process called *inflammation*. Call irritation *stimulus*, and inflammation *fluxus*, and you restore to its ancient importance the memorable axiom, *ubi stimulus, ibi fluxus*. Yet certain persons, forgetting these ideas, which are as old as medicine itself, talk to us of a new medical doctrine based on *physiology*.

Gentlemen, I have performed this experiment as well as others, and you shall learn the result. When one chances to prick a capillary vessel of the mesentery, the blood escapes by the opening, and the globules of the neighbouring tubes rush to the orifice produced, no matter what was the direction of their previous course. If, on the contrary, the point of your instrument simply enters the tissue of the membrane, without injuring any of its capillaries, the circulation continues as before: no abnormal movements of the globules are produced. These results merit serious examination. What, inflammation depends, you allege, on the exaltation of the vitality of a part, and here I find that pricking an artery determines an afflux of blood, while similarly injuring a membrane produces no derangement in the course of the fluid! And this, although the sensibility of the artery is positively null, in comparison with that enjoyed by the membrane in which it ramifies. If your theory were well founded, the violence of the inflammatory phenomena should be in harmony with the degree of vitality of the tissues: experience shows the precise contrary to be the truth. *Irritation* (to speak your language) is ineffectual in really *irritable* parts; powerful in those deprived of *irritability*. But, such absurd and contradictory hypotheses as these are, I delight to perceive, beginning to sink into merited contempt. In a variety of essays recently published, among others, that of Todd, of Liverpool, the question of inflammation is quite otherwise considered than has heretofore been the habit, and accurate microscopical researches substituted for rude and superficial observations.

But to the true explanation of the phenomena I have described:—When you pierce the wall of a capillary vessel, the blood, meeting with less resistance at the divided point than elsewhere, escapes through it, and flows out as long as the elasticity of the vascular tunics is not exhausted. But we know that the wounded capillary does not ramify by itself, but communicates by a multitude of branches with the neighbouring vessels of the same description, and that the pressure is equally divided among all. When you act on one of these vessels you act at the same time on all the rest. The most distant globules tend as strongly to escape by the orifice you have made as those in its immediate vicinity, because an equilibrium tends to become established. But the blood, we are told, has been seen to go backwards: to direct itself from the veins towards the arteries. Not a doubt of it; it would be marvellous were it otherwise; for, from the moment the resistance diminishes in any point, the liquid must, by virtue of the laws of physics, flow thereto from every possible quarter. Distend an India-rubber tube with water, and then make a hole in its centre, and you will find that the contained fluid reaches the opening from both ends with equal facility. The elasticity of its walls explains the phenomenon fully; and the same mechanism is in play in the living vessels. The globules are sometimes observed to suddenly reassume their natural course; when this is the case, by examining the point of the vessel injured, you will find that a clot has formed, and obliterated the opening; remove this clot, and the disordered movements instantly recommence.

The course of the blood is not modified when the membrane only is punctured, simply because the properties of the blood are unchanged thereby, and no solution of continuity effected in its tubes,—the impelling agent remains the same as before; there is no reason why any modification of the circulation should ensue.

If, instead of opening the vessel, you apply an acid to its outer surface, phenomena of a different nature follow; but these depend wholly on chemical action, as has been proved by M. Leuret in a series of most interesting essays. The acid combines with the tissue, renders it tough and hard, by taking up its water, and so diminishes the diameter of the capillary vessel

becomes too narrow proportionally to the volume of the globules; these stagnate and become motionless behind the contracted point. The blood which should have passed through the spot in question, flows back into the surrounding vessels, dilates them, and makes them appear larger than they previously were. In this case, as in the former, these artificial irritations and inflammations are nothing more than mechanical results. And yet these are the experiments which serve as the basis of the theory of irritation and inflammation,—a theory in which nothing is taken into consideration but the modified vitality of the tissues. I am well aware that at the present day it has lost something of its pristine vogue, but it still enjoys a certain share of credit with some practitioners, and it is well to annihilate even its last vestiges of popularity.

I have by no means exhausted the list of superannuated hypotheses, wherewith attempts have been made to explain the nature of inflammatory phenomena. Take, for instance, the notions propounded by Döllinger, in Germany: this author commences a recent essay by establishing that the globules are so many little beings, independent of the action of the heart, moving where they will, and having no guide but their caprice. Hear the description the German physiologist gives of their evolutions, as detected with the microscope:—"The globules sometimes change their shape, and become double their natural length; but this elongation does not depend on the pressure exercised by the walls of the vessels on them, from these being too narrow. I think that this change of form is due to the inclination of the globule to unite itself to its fellow, whether by virtue of an attractive force, or of their common movement." And elsewhere,—"The globules are always in a state of internal antagonism: at one time they may be looked on as so many particular animal organisms, as infusoria, possessed of something of individuality; at another, as parts of a whole, existing only in relation to the mass, and depending on the general relations of the sanguineous system. This is the reason we see them attract and repel each other, move and be moved, separate from the circulating system, and seek again to re-enter it."

Hence, there can be no doubt that the globules are animals of the order infusoria, maintaining a state of internal antagonism, and borne one against the other by feelings of hostility! Nevertheless, their intercourse is occasionally of an amicable kind: but M. Döllinger must describe their pastimes. "I have seen," says this gentleman, "two globules meet, stop, swing against each other, repel each other alternately, approximate and separate; at length one of the two yielding, takes a determinate course, and returns, followed by the other." It is really fortunate that these little creatures find the means of chasing away ennui in these sports; to be for ever turning and jostling each other would have been by far too monotonous an existence.

With ideas like these on the functions of the globules, Döllinger has made these bodies play a most dramatic part in the phenomenon of inflammation. I might extract some additional passages of his book to show into what extravagant notions the imagination may betray even the best understandings; I shall, however, content myself with the specimens already quoted, and pass to the theory of Kaltenbrunner, one of Döllinger's pupils. Kaltenbrunner, on intercepting the action of the heart in a frog's web, observes an oscillatory movement follow, and continue for a certain time in the capillary canals,—he inquires into the source of this movement. "We must not," he says, "seek for its cause elsewhere than in the blood itself. That fluid is formed of globules; movement is an innate property of those bodies; they originate in movement, exist by movement, and disappear when they lose their mobility." Further on we are informed,—"When the movement of the globules slackens, they immediately lose the accurately defined character of their borders; the latter cease to be at all distinguishable when the globules stand at rest. One is undecided whether it should be said that they disappear because they have ceased to move, or cease to move because they disappear.....The globules, besides their innate mobility, have also an inclination to move towards a central point, that is, towards the heart. This inclination is perfectly evident in the movement of the lymph, a fluid which has so strong an analogy to the blood.....The lymphatic globules possess this intrinsic mobility as well as those of the blood and of pus."

"The molecules of the blood have a natural tendency to move in the capillaries in such manner as to enter the veins. This phenomenon must be looked on as a very important one in the act of the circulation; but, on examining into this property in healthy organs, it may be objected to this statement that, considering the velocity and regularity with which the blood is propelled into the arteries, to return by the veins without the least interruption, the heart is, to all appearance, the sole cause of the movement. But the harmony which subsists in the state of health between the forces maintaining the circulation in action is the sole cause of this illusion.....The influence of the heart only is perceived, while that of the blood in the capillary vessels remains concealed. To prove the equal share taken by these two forces in the phenomena of the circulation, we have a means offered by

Nature in a variety of morbid states,—this means is *inflammation*."

In the explanation of the phenomena of inflammation the same independence of the globules is maintained to exist; nay, more, they are not only said to be independent of that organ, but actually to oppose to it a rival and superior power. A struggle ensues, which Kaltenbrunner thus describes:—"The inclination of the blood to return to the heart undergoes a change in inflammation, of which the nature is unknown. The blood, instead of flowing towards the heart, is then inclined to accumulate at the point of inflammation, which assumes the character of a second heart. The circulation may be now looked on as the result of a conflict between the true and false heart."....."If the intensity of the inflammation increase, the circulation ceases completely at the point where it attains the maximum of violence, that is, towards the centre; the more intense it is, the greater its extent becomes, and the more the quantity of blood that flows towards the inflamed part augments. At length the animal dies; the force of the heart is annihilated; the vessels of the periphery of the body empty themselves, and the blood ceases to circulate, except in the immediate vicinity of the diseased part. Long after death oscillations continue to be perceptible in the vessels round the inflamed part; whereas the circulation and all motion of the blood have ceased for some time previous to death in those that are healthy." All is over, then, with the animal and his true heart! The false heart has got the upper hand, and, enjoying the victory, pursues its manœuvres in full security, for it no longer need fear interruption on the part of its defunct rival. But the chances of war are capricious; we shall now see the false heart succumb in its turn. "When the inflammation is less violent, the *vis medicatrix* of Nature, and that of the heart, gradually recover their energy; the afflux of blood round the inflamed part diminishes, its movement grows regular, hæmostasis is at an end; and thus the equilibrium between the force which maintains the circulation by means of the heart, and that which depends on the capillary vessels, is re-established."

Gentlemen, I am unwilling to push our truly painful examination of this writer's extravagant conceptions any further; if tales such as these were not given to us as exact and well-observed facts, we might perhaps smile at their fantastic oddness; but really, brought forward as they are, they put one's patience to a most severe trial. Of course you do not expect one to set about refuting seriously such a host of absurdities; their simple rehearsal is in itself the severest criticism with which it is possible to lash their authors.

So far we have only considered the anatomy of the question; the causes, progress, termination, and treatment of inflammation, should also be submitted to minute examination, and no longer abandoned to the discretion of the nosologists. As for the causes of inflammation these are so numerous and varied that one cannot comprehend how agencies of so utterly dissimilar a nature should produce the same effect. Let us take, for example, the mucous membrane of the eye; its superficial position and naturally white colour allow the slightest changes in its circulation to be immediately perceived.

An atom of straw gets entangled between the lid and globe of the eye; if it remain there a few moments only, the redness induced in the membrane is transitory, disappearing totally on the removal of the foreign body; if, on the contrary, it remains longer in contact with the conjunctiva, that membrane reddens and becomes painful, and epiphora and an altered condition of its secretion supervene; ophthalmia has set in. Again, divide the fifth pair in the interior of the cranium, on the pars petrosa, and far away from the eye; one of the effects of this section is to destroy the sensibility of the conjunctiva,—the eye becomes as void of feeling as the epidermis. Nevertheless, an ophthalmia quickly follows the division of the nerve. Here, then, we have inflammation preceded in one case by an exaltation, in the other by extinction, of tactile sensibility. You will not surely assert that the disease originated in irritation in both instances; it would be too absurd to refer to the same principle such dissimilar causes. It were much better to confess our profound ignorance of the intimate nature of the irregularities thus developed in the capillary circulation.

The causation of the disease in the foregoing instances is, to a certain extent, intelligible, but what one might refuse to believe, if observation had not many and many a time proved the fact, is, that the kind of alimentation to which an animal is submitted exercises a special influence on the circulation of the organ in question. Dogs fed exclusively on gelatine, albumen, or any other proximate principle, are invariably attacked with ophthalmia, which brings on softening and perforation of the cornea and total destruction of vision; and in some cases this ocular affection makes its appearance before the general health is seriously disordered.

Do you wish for another example? You have it in the conjunctival ecchymoses, injection, and puriform secretion, the increased sensibility of the retina, the perversion of the nutrition of the membranes of the eye in our *defibrinised* animals; but if, instead of diminishing the quantity of fibrine in circulation, you simply deprive it of the

faculty of coagulating, as, for instance, by the injection of subcarbonate of soda, ophthalmia is then, too, developed. It suffices even to inject a little putrid water into the veins to produce inflammation of both eyes, or of one. But these are not all the causes of ocular inflammation that may be enumerated; far from it: the action of cold air, of damp, external violence, insolation, the reflection of the rays of the sun from white surfaces, the habit of working at very minute objects, and by artificial light, wounds, burns, deviation of the eyelashes, &c. &c. are to be added to the list. Again, we have scrofulous, venereal, blennorrhagic, gouty, rheumatismal, variolous, psoric, morbillous, scarlatinous, ophthalmia, &c.; in a word, there is scarcely a pathological condition which may not lead to the development of that disease. It would be a senseless attempt to endeavour to range, under a common head, so many and so various morbid elements; why, then, designate them by a common epithet?

What is true in the case of the eye is true in that of every other organ as well. I know not how it has come to pass that persons maintain that every material lesion of our organs originates in inflammation, and this in perverted vitality of the solids. Do not forget that every tissue derives from the blood the materials of its structure; modify the blood, and you at the same time modify the progress of the fluid through the capillaries, and, in consequence, the nutrition of the various parenchymata. You may even, by particular kinds of diet, transform the substance of an organ into a totally different matter; this I have done in the case of the liver. I had remarked, in some experiments on the injection of fatty liquids into the veins, that the tissue of the liver assumed a singular aspect; and had even hazarded a conjecture that by varying the process one might succeed in making *fatty livers* at will; and, in fact, when I resumed my researches on different sorts of alimentation, I found that animals which had been fed exclusively on butter, or fat, all of them presented, on examination after death, that particular state of the liver known by pathologists under the name of *fatty*. During life no single symptom occurred authorising any suspicion of the change effected in the structure of the organ; the appetite continued tolerably good; the health apparently satisfactory. You see here the liver of one of these animals; it presents all the characters of fatty degeneration; pale, faded-leaf colour, and friability of tissue; when I plunge a scalpel into its substance the blade is withdrawn smeared with fat. If you take a slice of this liver and rub a piece of paper well with it, the character of the combustion of the latter will indicate the presence of fat. I begged of M. Frémy to analyse the fatty liver of several of these animals, and that young chemist ascertained that this condition of the liver is produced by the deposition of a considerable quantity of stearine in the areolæ of its parenchyma. The other constituent principle of fat, namely, oleine, M. Frémy was unable to find. I was desirous to learn whether the fatty liver of the human subject was similarly impregnated, and found here, too, that the chief fatty ingredient was stearine. This result appears to me really interesting, and one possibly calculated to throw some light on the etiology of this disease of the liver.

These facts show the possibility of our being able to substitute milder means for the barbarous practices now employed to render the liver of certain fowl fatty; why might not this end be as well attained by changing the nature of their food, as by putting out their eyes, confining them in the damp, deforming their chests, and cramming them almost to suffocation with vegetables?

Here is a dog which has for the last three weeks been fed on unpurified beef fat. He is weak, thin, and dejected; I have no doubt that the liver is in a commencing state of fatty degeneration. You recognise in this animal a proof of what I told you just now respecting the influence of regimen on the production of ophthalmia; its eyes are red, and the lids coated with puriform matter. I beg you will notice the kind of fatty coating that agglutinates together the animal's hairs, and gives them a shining aspect. Might we not hazard the supposition that the oleine has escaped by the cutaneous exhalation, while the stearine has been deposited in the liver; it would be certainly worth while to test the correctness of this conjecture by chemical analysis.

I could not adduce a more striking example than this, to demonstrate the immense importance of alimentation in respect of the nutrition and diseases of our organs. Observe the harmony that subsists between the blood and the vessels containing it. So long as that fluid retains its normal characters, it traverses the capillaries of the liver freely; the moment it grows too viscid, it stagnates and allows some of its materials to pass by infiltration into the parenchyma of the organ. I do not myself know any signs—nor do I believe such are known by any one else—whereby the existence of a fatty condition of the liver may be diagnosticated in the living subject: except in certain cases of phthisis it is even impossible to suspect its presence. But suppose it ascertained that the liver is thus affected, what mode of treatment should we advise? Purgatives, to *stimulate the biliary secretion and disgorge the liver*; leeches to the anus, *to unload the mesenteric veins*; moxas and issues to the right side of the abdomen, to *displace the irritation*; venesection, to *lower the inflammatory state*; and many similar agents would,

no doubt, be employed by the routine practitioner. For my part, if I had to combat an affection of the kind, I should commence by inquiring into the previous regimen of the patient, and ascertaining if he had not made excessive use of fatty substance; that is, of butter, fat, and oil. If such were the case, beyond a doubt the first thing to be done would be to change the patient's regimen; the liver might, possibly, then recover its normal structure. We know that when individuals use sorrel to excess, and in consequence void oxalate of lime gravel in their urine, this morbid condition of the renal secretion may be totally removed.

The inference from all I have now said is, that the properties of the blood cannot be modified without the occurrence of pathological phenomena in the capillary circulation. What we see occur in the conjunctiva permits us to judge of what takes place in deep seated organs. Far from inquiring into the cause of these disorders, people are generally contented with referring them to favourite theories, and, with a word which is essentially meaningless, fancy that they express most important facts. If the circulation be suddenly disordered, we have an *acute* inflammation; if the progress of things be slower, the inflammation is *chronic;* if any tissue be found in a disorganised state, when no morbid process was previously suspected, still there has been inflammation; but here it has been *latent*. Everything is thus easily explained, especially whatever is, in truth, inexplicable.

If our acquaintance with the manner in which inflammation originates be imperfect, our notions respecting its various modes of termination are no less so. Here, too, we find nothing but routine classifications, based on the grossest of the phenomena presented by the diseased tissues. According to authors, the various modes of termination of inflammation are reducible to six categories: those of *delitescence*, *metastasis*, *resolution*, *suppuration*, *induration*, and *gangrene*. An inflammation being given then, the only difficulty consists in fixing to which of these categories it belongs. This would, no doubt, be simple and most ingenious, if each of these groups were founded on a reasonable theory of the phenomena referrible to it; but such is not the case: words we may have in abundance; correct ideas few or none.

By *delitescence* is understood the sudden disappearance of inflammation. Why this promp cessation of the morbid symptoms? Because the circulation, which was momentarily disturbed, resumed its natural course before considerable obstruction and extravasation had time to form. You have an example of this in what occurs when you apply a burning liquid to your hand; it reddens; more blood than natural flows to it; there is now *irritation;* plunge it into ice-cold water, the quantity of blood rushing to the part is diminished; the redness decreases; you have arrested the *inflammation* in the outset. I have used the expressions irritation and inflammation to make you feel how unfit these words are in such a case, inasmuch as they turn attention from the chief point, the influence exercised by temperature on the progression of the blood in the vessels. For the just comprehension of these phenomena, I beg to refer you to our experiments on cold and heat with the hæmodynamometer.

By *metastasis* is meant the sudden and spontaneous removal of inflammation from the part it occupies to some more or less distant quarter. I shall not trouble you with all the hypotheses which have been imagined to describe the route taken by the inflammatory element in such cases. Some make it travel with the blood; others have supposed it to be summoned by the sympathies; others have been reduced to making it jump from one place to another by virtue of a unknown power, emanating from the vital properties. There is a deal of vagueness connected with the meaning of this word metastasis; the solution of the problem is reserved for experimental research.

Resolution is the gradual disappearance of inflammation, and constitutes its most favourable termination. The disease in this case goes through all its periods *gradatim;* the pain diminishes, the swelling disappears, the parts return insensibly to their normal condition, and the free exercise of their functions. How do the obstructed vessels recover their lost properties? I believe that their recovery depends on the modifications undergone by the blood accumulated in the part. This blood at first became solid by the separation and infiltration of its liquid portion through the pores or ruptured openings of the vascular tunics; at a latter period the coagulated fibrine liquefies, becomes fluid again, and is carried along by the blood, propelled by the heart's action. Once the capillaries are rendered free in their interior, the extravasated materials re-enter the circulation, and the swelling disappears. The increased heat of the inflamed part explains very clearly these chemical changes undergone by the blood accidentally arrested in its course. Observe what happens in vast ecchymoses produced by violent contusions: the blood remains in the fluid state for a certain time; its aqueous part then passes by infiltration into the circumjacent tissues; a solid coagulum occupies the centre of the injured part; this clot gradually softens, breaks down into small pieces, which dissolve in the serosity, and when rendered perfectly fluid are wholly removed by absorption. By the same mechanism, as it appears to me, the resolution of inflammation may be explained; nevertheless, these views require substantiation with the microscope.

When the materials of the blood, arrested in the vessels, or extravasated from them, are softened, they do not always re-enter the circulation; too prolonged a sojourn in the inflamed part disorganises the structure of the tissues, and life, momentarily suspended therein, threatens to cease almost completely. The tumour gradually loses its hardness, its centre *points*, and there fluctuation is perceptible, while elsewhere it is hard and tolerably firm; in other words, the affection terminates in *suppuration*. Pulsative pain, fluctuation, and attenuation of the skin, announce the formation of pus, when the inflammation is superficial; but it is more difficult to assure oneself of its presence when the disorder is deeply seated in a limb; we are then obliged to have recourse to the rational signs, with which I have nothing at present to do. You perceive that the essential difference between the terminations by resolution and by suppuration consists in the fact, that in the former the molecules of blood are absorbed after having softened; whereas, in the latter, they undergo further modification, are completely transformed, and expelled from the system.

Authors are not agreed as to the mechanism of suppuration, and as to the substances which produce pus: the question does not, however, appear to me unanswerable. We have seen the principal materials of the blood become extravasated, and so constitute inflammatory engorgement; in proportion as they liquefy they combine, intimately, with the tissues in the midst of which they are effused, so that pus is formed at once from the solids and liquids. What proves that it is formed in the diseased part itself is, that it assumes particular characters, according to the organ or tissues in which it is found: thin and greyish in the bones; opaque and caseiform in the cellular membrane; flocculent in the serous, and greenish and thready in the mucous membranes; reddish in the liver; yellowish-grey in the muscles; pus presents special characteristics wherever it is examined. One of the gentlemen present, Dr. Gluge, is able to distinguish from each other the different species of pus by the simple inspection of their globules. I have been among the witnesses of a variety of tests to which his powers have been submitted, and, in every instance, he has been successful. I brought pus from the hospital which had been collected in the lung, the pleura, the peritoneum, and the cellular tissue, and he invariably announced its origin with perfect correctness. I recollect even having endeavoured to entrap him by presenting him with some artificial pus of my own making, as though taken from one of my patients, but he was not to be deceived. I have, therefore, not the least doubt that the globules of the various species of pus may be recognised by certain physical characters. This important fact is another to be added to the list of experimental discoveries.

When the inflammatory engorgement remains stationary, when the hardened condition of the tissues augments, while the other inflammatory phenomena disappears, the disease is said to terminate by *induration*. This mode of termination is proper to glandular organs, and generally succeeds a slow, obscure inflammatory action. The modifications undergone by the indurated parts are not yet precisely understood; all we know is, that the extravasated matters do not re-enter the circulation, that they become organised, and soon form an integral part of the tissues. By what series of phenomena does inflammation of the testicle effect the transformation of the testicle into a scirrhous mass? How comes it that encephaloid of that organ often appears to follow simple disordered conditions of the progression of the blood? There can be little doubt that the nature of the materials effused gives a particular character to the manner in which the disease terminates. According as these remain solid or liquefy, the consistence of the part undergoes changes which would furnish most interesting matter for analysis, but which writers have been contented to designate by different epithets without seeking their cause.

On the termination by *gangrene* I have already spoken to you at sufficient length.

It remains for me to discuss the treatment of inflammation; but this is so vast a subject, Gentlemen, and the indications it embraces are of such an import, that it would be impossible for me even to glance at its chief points in the few minutes I have still at my disposal. Let me state, however, that if the phenomena of inflammation cannot be referred to one origin, the same is even more emphatically true of its treatment. What is to be understood by the strange denomination of antiphlogistic? Will broths and mucilaginous liquids restore the blood its coagulability, and prevent its extravasation through the coats of its vessels? Are leeches the sole means of removing the *thorn* that stimulates the inflamed part? It is rational to attack the blood, as the movement of that fluid is disordered; but it is its composition, much more than its volume, that requires to be modified. What is well fitted for one inflammation, would be injudiciously employed for another. In one case the action of the organs needs stimulation,—in another, depression; in one patient the blood ceases to circulate, because it is too fluid; in another, because it is too viscous; in a word, each inflammation calls for its particular therapeutical measures.

You have remarked, without doubt, Gentlemen, that in the course of the experimental inquiries which I now bring to a conclusion for the present, I have often hesitated

about the right inference to be drawn therefrom, and that occasionally I have assumed a result which further experience contradicted, or appeared to contradict. You remember the hog, for instance, of which I spoke to you some time past, whose blood was perfectly coagulable. Fancying that an oleate of soda had formed in this case, I procured some of that substance, and injected a certain dose of it into the veins of a dog, but the animal continued to enjoy excellent health. The condition of the blood in this animal was, consequently, incomprehensible, as far as we were able to judge at the time. Nevertheless, the explanation of the seeming anomaly was the simplest in the world, though only discovered by chance,—the butcher who bled the animal beat up its blood with a rod; in other words, defibrinised it, before sending it to me. The circumstance furnishes a new proof of the necessity of seeing everything with one's own eyes, and not trusting to the accuracy of any one, even in the most apparently trifling particulars. But indecision, such as that I allude to, nay, even errors themselves, are beneficial to the interests of the science, when the experimentalist has the wisdom to re-examine over and over again dubious facts: the art of performing experiments with all necessary care is thus acquired. Such is the method I have adopted from the time I engaged in the task of teaching, and far from regretting that I have done so, I believe that to it, in a great measure at least, I am indebted for the honour of occupying this chair.

Before we separate allow me, Gentlemen, to thank you cordially for the kind interest with which you have attended these lectures.* The conversations I have had with some of you, and the objections you have occasionally made, by letter or otherwise, to the doctrines I have laid down, convince me that my intentions have been understood and appreciated. If your attention has been constantly kept alive, and your assiduity never allowed to relax, I am far from attributing any merit to myself on that account. No, Gentlemen, flattering as I shall always esteem your approbation to be, to obtain this was not the first object of my ambition; my chief desire was to advance the science we cultivate, and be useful to my fellow men,—to raise the science of medicine from the inferior rank it holds, and place it in its true position,—at the head of human knowledge.

* Lest this should be considered an indelicate expression on the part of M. Magendie, we beg to remind the reader that the lectures at the College of France are, as at the other scientific institutions of Paris, FREE TO THE PUBLIC.—Rep. L.

CLINICAL OBSERVATIONS

DELIVERED AT

ST. GEORGE'S HOSPITAL,

By SIR B. C. BRODIE,

ON DISEASE OF THE VERTEBRÆ.

THERE is a joint between every two vertebral bodies, with the intervention only of a piece of cartilage between them. If, in a case of diseased vertebræ, you dissect the parts in the early stage of the complaint, you will sometimes find the bones more vascular than natural. After this a cheesy deposit takes place, and the vascularity of the part diminishes. At other times you will find that the vertebræ are abnormally light, soft, and spongy in texture, admitting of being easily cut through with a knife; and, again, in other cases, you may find them unusually hard and heavy in texture, as bones frequently are in chronic inflammation, before ulceration sets in. Diseases of the vertebræ sometimes commence in the intervertebral substance. In the healthy state there is, in the centre of the cartilage, an elastic, soft, gelatinous substance. This sometimes becomes brown and brittle, and seems divided into fragmentary lamellæ, and loses its connecting adhesions above and below. In this manner caries will sometimes commence in several parts of the vertebral column at once. In other cases the ulceration begins at the anterior or lateral surfaces of the vertebræ, but most frequently its first effects are seen at that part where the vertebral bodies are connected to the cartilage above and below. When ulceration once commences, it spreads very rapidly, and may continue for some time before suppuration comes on. This may occur when, as yet, there is but little destruction of the bones from ulceration, or the contrary; or the vascularity of the bones may diminish and they may die, but not exfoliate to any great extent. Ulceration may go on in the bodies of the vertebræ, as in other joints, for a long time without suppuration coming on; but, sooner or later, abscesses will form on the surface of the carious bone.

Sometimes suppuration begins with but little destruction of the vertebral bodies, and but a very small quantity of pus may be secreted. Sometimes, also, suppuration will not commence until ulceration has proceeded to a very great length. When the bodies of the vertebræ die they exfoliate as in scrofulous cases, their vascularity becoming diminished, and the sequestrum is thrown off, but not to any very great extent. The vertebræ are sometimes extensively implicated, and many surfaces of bone are affected, whilst, in other cases, the reverse of this obtains. When an abscess forms it

points sooner or later to the surface, according to its situation. Sometimes, however, it makes its way inwards into the cavity of the theca vertebralis. I remember one case in which the cervical vertebræ were affected, and the whole cavity of the theca was filled with pus.

Caries sometimes occurs in the joints, between the articulating processes, and this is more frequently to be met with than is generally supposed. This most frequently occurs in the cervical vertebræ, and the destruction of parts is, in these cases, greater than where the disease is confined originally to the bodies of the vertebræ.

Where caries affects the bodies of the vertebræ you do not notice, at first, any alteration in the figure of the spine; and this alteration, when it occurs, is marked by an angular curve, greater or lesser, according to the situation of the original disease. In the lumbar vertebræ, the disease may go on for a long time before any alteration is observed in the shape of the spinal column, because their spinous processes are short and stand directly out. The same may also be said of the cervical vertebræ. But, in the dorsal vertebræ, the bodies of the bones are small, compared to those of the loins; their spinous processes are long and point downwards.

Angular curvature, then, only occurs in the advanced stages of carious disease of the vertebræ. Sometimes it shows itself suddenly, in the course of a month perhaps, in cases where matter forms suddenly, and as suddenly discharges itself. Angular curvature differs in different cases; sometimes there is a double angle, one below the other. If the curvature be slight there is but little alteration of position in the internal viscera; if the curvature be great, the course of the aorta is altered, and I have dissected cases after death in which the aorta made two or three turns. Sometimes, in these cases, the sternum and ribs project more than is natural, the heart appears displaced, and the lungs seem compressed and diminished in size.

I shall now give you a general account of this disease of the vertebræ as it is developed in its symptoms. The pain is sometimes very obscure and trifling in the early stage, and it may gradually increase to very great severity, or it may remain very trifling in degree throughout the entire case; or it may, on the contrary, be very severe from the first day to the last. I have known cases in which the curvature has been very great and the patient has suffered no pain whatever; whilst I have known others in which the curvature was much less, and the slightest motion gave the patient intense pain, and pressure caused very great agony. Here, then, are two extreme cases; but between these there are many degrees of variation and change. In scrofulous caries of the spinal bones there is, generally, but little pain suffered, whilst in simple inflammation, followed by ulceration, the pain is generally very severe. This disease of the vertebræ begins sometimes very insidiously, and can be traced to no original source or cause. It will sometimes follow an attack of fever, and caries, with all its symptoms, becomes soon set up. There are other diseases of bones which frequently show themselves after an attack of fever. Sometimes this occurs in persons of truly scrofulous habit; sometimes in those who possess the healthiest constitutions. Pain comes on first, and suppuration and abscess soon follows. In some cases, however, a long time elapses before any change in the shape of the spinal column occurs, or abscess presents itself. I know of a case in which abscess only showed itself ten years after the irruption of the original disease; and I know of another in which the disease had existed twenty-one years before any abscess presented. An abscess, therefore, may be pent up for a very long time. It is very strange, however, that it may exist for this length of time without the constitution suffering from its irritation.

Well, then, either sooner or later, the abscess bursts. When this occurs in young persons they may recover, the cavity may become filled up, and anchylosis may take place between the vertebræ. Generally, however, the reverse of this presents itself, and the patient dies. Hectic fever shows itself; the lungs become affected, and the patient dies from some internal disease supervening upon the fever. The children of the upper classes of life may, and do sometimes recover from the disease.

Disease of the bones of the spine may irritate the spinal chord, or the cauda equina, and cause irritation of the parts below, which they supply with nervous influence. These symptoms differ, of course, according to what part of the bone the caries is situated in.

If the caries be situated in the upper cervical vertebræ, there is pain in the back of the neck when no motion takes place, and stiffness; and such a case may be simply mistaken for one of stiff neck. There is pain extending up to the head, and this may last for a long time before angular curvature shows itself, because the spinous processes of the cervical vertebræ are very short. The symptoms which then ensue are numbness and paralysis, with loss of the use of the arms, pains in the shoulders and arms, which may be severe or not. This is followed by paralysis extending from muscle to muscle. If the disease goes on these symptoms extend to the lower limbs, and they become paralysed, and the patient cannot move at all. The abdomen becomes affected, the bowels become torpid, and no purgatives will act upon them unless they

be combined with ammonia. Some time will frequently elapse before abscess forms in the neck, which generally occurs at its inferior and lateral part. You should be careful in detecting this disease in its early stage, and you may know it by the accompanying pain and stiffness. If you put your hand on the patient's head and press it down firmly, it will cause very great pain, which simple stiff neck will not do.

When caries occurs in the dorsal vertebræ, there may be pain or not at the actual seat of the disease, or the pain may be in the loins, or referred, in the first instance, only to the hip, which might lead an inexperienced practitioner to imagine the disease was situated there. As the disease goes on, then, in the dorsal vertebræ the pain extends; the chest and abdomen, the bowels become torpid, and there is a frequent sense of constriction across the epigastric region, with tightness of the chest and dyspnœa. The lower limbs become paralysed, and the patient trips in walking. The muscles are affected by spasmodic twitchings and convulsive movements. The bladder becomes paralysed, and the urine is with difficulty voided, whilst the spine becomes distorted, more evidently so in the neck than elsewhere, from the spinous processes of the cervical vertebræ pointing downwards. As the disease progresses the angular curvature increases; an abscess forms at the anterior and lateral surface of the spinal column, which is bound down by a thick capsule of lymph, preventing it frequently from coming forward in the spot in which it forms, and frequently causing it to descend along the line of the psoas muscle, and present in the groin.

If caries occur in the lumbar vertebræ the abscess may be felt in the belly, in front of the kidneys, where it may lodge for a long time, and thence descend along the psoas muscle into the groin, pass thence through the sacro-sciatic notch, following the course of the sciatic nerve, and coming out at the back of the thigh; or it may burst at the back of the abdomen; or I have known cases in which it has come forward in the chest. The pain in the loins may be at one side only, or it may extend across to both, and it may be slight or severe in suffering, according to the condition of the bone, whether it be hard or soft from scrofulous disease or chronic ulceration. In some cases the pain is severely aggravated by the slightest motion of the lower limbs, and this may continue for three or four years. I knew one in which this state of disease continued for ten years. After this abscess appears. Sometimes there is paralysis of the parts below; sometimes not; and sometimes there is angular curvature, and sometimes not. In these cases the abscess will present itself at the anterior superior spinous process of the ilium; and sometimes by the side of the sacro-lumbalis muscle, or it may burst into the rectum or the scrotum, or it may present at one place and shift thence to another. When it presents itself in the groin it is small, but very soon increases in size. An abscess may be present but cause no constitutional disturbance; or there may be frequent rigors, night sweats, and hectic fever. Within the spinal canal of the lumbar vertebræ there is no spinal marrow, but only the cauda equina, each with its separate neurilema. The bodies of the lumbar vertebræ are larger, and it therefore takes a longer time for an abscess to eat its way out by ulceration. It is, therefore, a longer period before paralysis occurs, and a greater degree of ulceration is required to produce angular curvature; and when this does occur, the projection outwards is not so well marked, from the spinous processes being shorter.

You may safely diagnosticate between this affection of the lumbar vertebræ, and others in which the bones and muscles of the loins are affected. Common lumbago comes on suddenly with pain and incapability of motion, which, after a time, go off. Inflammation of the lower part of the spinal chord and the cauda equina produce pain with effusion of lymph around the spinal marrow; the sudden and violent pain in the loins resembles lumbago somewhat; but you may distinguish it by the pain not being increased on motion, and if you cup and bleed, and give mercury, the pain and paralysis subsides. Pain from affection of the kidneys generally occurs in one loin only, with consequent irritation of the bladder, with albumen and pus in the urine, which latter symptoms will sometimes render the diagnosis difficult. I knew of a case of albuminous urine, occurring in a case of diseased spine, mistaken for disease of the kidney; but whether disease of the spine will extend to the kidney, my experience does not enable me to determine.

CLINICAL REMARKS

BY DR. SEYMOUR.

RHEUMATISM.

Rheumatism may transfer its seat of pain from one part of the body to another, as from the extremities to the heart. When rheumatism recedes the heart may become affected, but this latter symptom may arise and the rheumatic pain still continue in the extremity. The reverse, however, of this most frequently occurs, and one hand, for instance, may become hot, red, and swollen, and in the course of an hour the other one may become similarly affected. If the heart be affected, and the patient dies, you will find the surface of that organ covered

by a honeycombed layer of lymph, with the pericardium exhibiting strong traces of inflammation. The result of this is, that lymph is frequently poured out from opposite surfaces of the pericardium, which become glued together, and the action of the heart thereby becomes restrained. In these cases there is always great difficulty of breathing, and great distress of countenance. Mercury here is your sheet-anchor, and the quantity of it you are sometimes obliged to give is very great in these cases. Calomel is the best preparation you can use, and it has the same prophylactic effect in this disease, as in croup or in iritis. The relief which mercury gives is in proportion to the severity of the disease. It is an affection which is very apt to recur, and in some families is hereditary. I knew a family in which four members died of this affection at the age of thirty. If after giving calomel and opium any portion of lymph remains unabsorbed, it will become organised, and the parts gradually become accommodated to the new structure. If after the first attack the patient again exposes himself to the renewed operation of the exciting cause, a fresh layer of lymph becomes poured out, and in this way, in some cases, after death, layer after layer will be seen, like the coats of an onion. Colchicum is sometimes serviceable in rheumatism of the joints, but it is not of much service in rheumatism of the heart and pericardium; and in these latter cases it possesses this disadvantage, that it lowers the bodily strength and powers.

You may generally safely diagnosticate between the pain caused by a renal calculus passing down the ureter and the pain of enteritis in this manner. When a calculus is passing down the urinary passage between the kidney and the bladder, you have pain in the penis, and pain and retraction of the testicle, as well as much acute suffering between the situation of the umbilicus and the ureter, and you may have severe vomiting and hot skin, and a slow weak pulse. Now, many of these symptoms you may have in enteritis, but the pain in this latter affection is always increased by pressure, while in the former case it is not. In these cases of calculous affection the diet should be animal, easily digestible, and nutritious.

Ascites generally results from disease of the liver, anasarca from disease of the heart or kidneys. In these cases the liver is hard in texture and shrunken in size. Its peritoneal surface is thickened, and its sharp edge blunt; and on examining a patient with this disease after death, you find the liver tucked up under the ribs on the right side, and diminished one-third of its natural size. Every portion of its secreting structure, as well as the vena porta is pressed upon.

A Letter to the Lord Chancellor on the present State of the Law of Lunacy, &c. &c. By A Barrister of the Inner Temple. 1838, London.

From a pamphlet, bearing the above title, we extract the following judicious observations relative to the present laws which regulate lunatics:—

"My present object (says the author) is simply this,—to draw your Lordship's attention to the fact, that by the law as it now stands, an idiot—a monomaniac—the mere lonely and quiet sufferer from morbid feeling and imagination, is placed in a worse condition, and a more perilous situation with regard to his personal liberty, than the criminal, who by his delinquencies has rendered himself liable to punishment. The *property* of an actual or supposed lunatic is infinitely better guarded than his person; indeed, property receives all the protection which can be bestowed; but, let the individual himself be never so inoffensive, and sane upon every subject but one, his personal liberty can at all times be placed in jeopardy by the written *order* of *a friend*, when backed by the warrant of two physicians, surgeons, or apothecaries."

"The principal Act of Parliament, which 'regulates the care and treatment of insane persons in England' is the 2 and 3 Wm. IV. cap. 107; this has since been partially amended by the 3rd and 4th Wm. IV. cap. 64; and was, subsequently, continued in force until the end of the present session, by the 5th and 6th Wm. IV. cap. 22. There are also two other important statutes touching the same subject, (viz.) the 3rd and 4th Wm. IV. cap. 36, and the 9th Geo. IV. cap. 40, but as the first, chiefly relates to the issuing of writs *de lunatico inquirendo*, and the proceedings thereupon, and the second, being almost entirely confined to the erection and regulation of County Lunatic Asylums, they cannot be said materially to interfere with the subject of this letter, and will not in consequence be further alluded to.

"The statute against which the unfortunate sufferer by mental illusion, has real ground for complaint is the 2nd and 3rd Wm. IV. cap. 107, because it sanctions by implication, his *immediate* arrest and imprisonment, and that upon no better verdict than the opinion of any two physicians, surgeons, or apothecaries, when evidenced by their certificate to that effect. Before the establishment of private mad-houses under the authority af Parliament, it was the practice of the Court of King's Bench to interfere by *habeas corpus*, for the purpose of discharging persons improperly confined therein, see *Rex* v. *Turlington*, 2 Burr: 1115. But where is there such an application of modern date? The mad-house is inviolate, except upon an occasional inspection by the

Commissioners, and even then the unhappy individual is too much within the mercy and control of people whose interest it is to prolong his confinement until the latest period, for him to be enabled to make a successful complaint."

"By the 27th section of that statute (2nd and 3rd Wm. IV. cap. 107), it is enacted 'That no person (not being a parish pauper) shall be received into any house licensed for the reception of insane persons, without an *order* under the hand of the person by whose direction such insane person is sent, which *order* shall be according to the form annexed, and in it shall be named the christian and surname, and place of abode, and the degree of relationship or other circumstance of connection between such person and the insane person, and the true name, age, place of residence, former occupation, and the asylum or other place if any, in which the insane person shall have been previously confined, and whether such person shall have been found lunatic or of unsound mind, under a commission issued for that purpose by the Lord Chancellor, &c.—nor shall any such person be received into any such house without a medical certificate of two physicians, surgeons, or apothecaries, in the manner directed by this Act, and if any person shall knowingly or wilfully receive any insane person or persons represented or alleged to be insane, to be taken care of or confined in any house licensed under this Act, without such order and medical certificate and without making within three calender days after the reception of such, a minute or entry in writing in a book to be kept for that purpose, &c., of the true name of the patient, and also the christian and surname, occupation and place of abode, of the person by whom such patient shall be brought, every person so offending shall be deemed guilty of misdemeanor;' the following section in like manner also prescribes 'that every medical certificate upon which any order shall be given for the confinement of any person (not being a parish pauper) in a house licensed under this Act, shall be according to the form annexed, and shall be signed by two medical practitioners not being in partnership, and each of them being a physician, surgeon, or apothecary, who shall have separately visited and personally examined the patient to whom it relates, not more than seven clear days previous to such confinement, and such certificate shall be signed and dated on the day on which he or she shall have been so examined, and shall state that such person is insane, and proper to be confined; and every such certificate for the confinement of any person, in a house licensed under this Act, if the same be not signed by two medical practitioners, shall state the special circumstances, which shall have prevented the patient being visited by two medical practitioners, and any patient may under such special circumstances, be admitted into any such house, upon the certificate of *one!* medical practitioner, provided such certificate shall be further signed by some other medical practitioner, within seven days next after the admission of such patient into any such house as aforesaid: and any person who shall knowingly and with intention to deceive, sign any such medical certificate untruly, setting forth any of the particulars required by this Act, shall be deemed guilty of a misdemeanor.'

"Such is the statute to which a supposed lunatic must apply for protection, and which constitutes his safeguard from forcible arrest and imprisonment; and thus it is that a mad-house-keeper is shielded by an implication of law, against almost every enormity.

"It is true that the statute renders it incumbent upon the medical practitioner 'to visit and personally examine' the patient; but the fault rests in the tribunal, not in the evidence; the evidence may be sufficient or insufficient, at any rate it is taken; for every member of the faculty knows, that having once formally inspected, and having signed the warrant of incarceration, no law can reach him, however unfounded the certificate may be; because, all that is required, is his *opinion* in writing, and insanity being defined by no given rules, nor distinguished by any uniform or infallible test, everything rests upon *an opinion*, and under that opinion, whether right or wrong, the wise and the ignorant, the honourable and the dishonourable, may shelter themselves with impunity."

Having pointed out the various degrees and forms of insanity, the author asks:—

"Does it accord with any principles of reason, of law, or equity, that such individuals (monomaniacs)—and who compose by far the greater number of insane persons,—should be treated in the same manner as the raving madman,—that they should be torn from their associates, and their homes, to be made the inmates of a licensed gaol! there to be guarded with all the horrors of their dreadful situation, and if reason has not quite deserted her citadel, there to be distracted by surrounding objects, and harrassed into wretchedness, until the intellect is altogether dislodged from its seat?

"Whatever custom may have done towards sanctioning a law which places on the same footing the inoffensive monomaniac with the phrensied lunatic, common sense must at once rebel against such an arrangement. And, surely, my Lord, an inquiry on your part as to the necessity of rendering every person who is thought to be *non compos* liable to an *immediate* consignment to a mad-house, would not be without some benefit."

To show the difficulty which occasionally occurs of determining what insanity really

is, and the mistakes into which "hospital" surgeons may fall, the author cites the case of Mr. Paternoster, and also that of Holmes, in the following words:—

"Another case, although of a somewhat different description lately appeared in a medical publication of considerable circulation,* and as the report of it at the time when it occurred, must have filled the mind of every reader with astonishment and dismay, so does it become a more imperative duty on the part of the Legislature to inquire into a system which is so constantly capable of abuse, and provide some remedy in its amendment. A labouring man named Holmes had been admitted to the Westminster Hospital, with a severe injury in the wrist joint; excessive inflammation and consequent pain were produced—delirium followed—and, somehow or other, a surgeon of the establishment came to the conclusion, that the man was mad, and would be a fit inmate for a lunatic asylum. A certificate was signed accordingly; the *statute* was complied with; and the man against whom this warrant was out would inevitably at this time have been lodged amongst madmen, if an intelligent individual connected with the hospital had not taken the pains to inquire into the case. This gentleman, by prescribing certain medicines, brought the patient into a profound sleep, which dissipated the delirium, and recovery almost immediately followed!"

To remedy such errors as this, the author proposes that—

"Instead of the power being vested, as it now is, in the hands of any two physicians, surgeons, or apothecaries, no person whomsoever should be confined in any mad-house, lunatic hospital, or licensed asylum, until an inquest of twelve men had first determined upon the fact, whether the individual was sane or not; it would then become a matter of proof to be supported as well by the evidence of medical men, as also by that of the friends of the unfortunate sufferer (the latter being frequently, from their connection, the better judges, whether the subject of inquiry ought to be under any actual restraint); counsel if required, on either side, should be permitted to attend; and the supposed lunatic, if not in a dangerous state, should always appear before the inquest; if, however, it would be imprudent to produce the lunatic from any ill consequence which might attend the violence of the malady, it ought then be compulsory on two medical men, or one medical man and two other persons, to testify such facts upon oath.

"This trial by jury might be very easily carried into effect throughout the country, by constituting as judge upon every such inquiry, the Coroner of the county, division, or jurisdiction, within which the lunatic might happen to reside, or to have been taken charge of by the parish officer. The Coroner to be paid in like manner as he now is, upon other inquests which he holds. In the metropolitan districts where the vast proportion of lunacy cases arise, an officer appointed by your Lordship, might occupy in this respect the place of Coroner upon such occasions, and he should also be invested with the same power as the Coroner now possesses in compelling the attendance of jurymen, &c. Upon the record of a verdict of 'Insanity' it would then be competent to the constable, parish officer, or a relative, with such a warrant, to take charge of the lunatic, and place him under keepers, until such a time as his sanity was restored.

"The proposed alteration, could not in any respect interfere with the present system of inspection, neither would it tend to abolish commissions *de lunatico inquirendo*, for such commissions will always be called into existence when property is the question involved, and when the particular time of the individual becoming incompetent to manage his own affairs is the subject for inquiry.

"Independently of the protection which this trial by jury would afford to personal liberty, there is another cogent reason why it should be carried into effect. It is, that too heavy a responsibility is at present thrown upon the medical profession at large; the most conscientious practitioner, as well as the ignorant graduate, who obtains his degree by the mere payment of a fee, is equally liable to have an action brought against him for causing the arrest and imprisonment of an insane patient, and he is also at all times subject to an indictment for the assault."

* The Lancet, vol. I. 1838-9, p. 98.

DEATH FROM A COUP DE SOLEIL.

Case 1. June 17.—Davis, age 25, admitted into Haurah Hospital at 6 o'clock P.M., insensible; breathing stertorous, oppressed; pulse very small; scalp hot. In my absence he was bled. Cold lotion applied to shaved head. He died an hour after admission, his face and neck having become purple, his body cold. The story given with him was this, viz., that he had complained of his head in the morning; that he had gone ashore about 8 o'clock A.M.; that at noon he was at work again aboard his ship; that about 2 o'clock P.M. he complained of feeling queer about his head, and remarked that his hands felt wet and clammy. Very soon afterwards he became worse; his skin became cold, until received into hospital in

a state of deep collapse; he had vomited on his way to the hospital. He is said to have been previously a healthy man.

On examination 12 hours after death the most important appearances were, viz., a flow of several ounces of black blood upon division of scalp, evincing great congestion of the venous branches of the external jugular. The appearance of the blood-vessels of the brain, generally, was not that of great congestion; at the sides and front of each anterior lobe of brain, beneath the arachnoid membranes, was a diffused redness of several inches extent, as if from exudation of blood in the form of a thin layer; crura cerebri and base of middle lobes remarkably softened; both lungs crepitated under pressure in front, were of a purple colour externally; the cut surface of the posterior lobes looked like divided coagulum, and black blood escaped freely; there were two or three ounces of black blood in the bag of each pleura, which appeared to have exuded from the turgid lungs. Heart: all its cavities empty, the divided walls of both ventricles pale, of the right much attenuated and flabby; colour of the lining membrane of all the cavities of the heart, of the valves, of the pulmonary artery and valves of the aorta to its bifurcation, of a vermilion tint; at the right side of the heart the colour, both of the lining of pulmonary artery and of cavæ, was more of a dusky red. Mucous membrane of trachea and bronchi of a deep blue colour. Liver large, of a clay colour. Stomach: its mucous membrane of great end of a deep purple colour, pulpy, smeared with a dirty thick mucus; duodenum smeared with bile, its coats softened and easily lacerable; the surfaces of other intestines pale, smeared with the same kind of secretion as the stomach.

Case 2. August 14.—A stout young man was admitted into hospital. He had been drinking rather freely the day before; he joined the *Argyle* this morning quite well, and was at work aloft during the day (a clear sunny day); at 4 o'clock P.M. he complained of being ill.

Evening, 9 o'clock P.M., I first saw him (he was just admitted); pulse rapid, bearing pressure; skin hot; respiration rattling; face puffed; eyelids kept closed, pupils contracted, insensible to light, globe of eyes vascular; violent action of heart, of carotids, or temporal arteries; the ear applied to the chest perceived a loud rattling sound of respiration; insensibility complete; head hot. He is said to have vomited just before he quitted the ship; with finger on his pulse I had him bled to ℥ xij. until it became softer and compressible; the skin remained hot; the breathing unrelieved after the bleeding. A massak of water was poured over his head, sinapisms applied to belly and both legs. He died at midnight; his body remained warm to the last; frothy and very offensive matter escaped from his mouth just before death.

Post-mortem examination early in the morning.—Head and neck of a purple colour; a large quantity of dark blood poured out upon division of the scalp.

Head.—Congestion of blood in the large veins going to the longitudinal sinus; minute ramifications of vessels on the surface of the hemispheres injected with blood; at base of brain, vessels running over the pons varolii injected; substance of brain of healthy firmness, numerous black bloody points upon division of it, sinuses of dura mater distended with blood; a quantity of black blood issued from the spinal canal after removal of the brain.

Chest.—Lungs accurately filling the chest, not collapsed; the dependant lobes on both sides gorged with black blood; some thin black blood was found in each bag of pleura, which appeared to have transuded through the serous membrane and lung; lungs on both sides, in front, of a healthy aspect and crepitating beneath fingers; the lining membrane of the trachea, bronchi, and their minute ramifications of a dark red dingy colour; frothy mucus escaped from divided air cells.

Heart.—Right auricle distended with blood, partly fluid, partly coagulated; right ventricle upon division appeared pale and flaccid; left side of heart quite empty; a distended vein was seen running along base of ventricles at circle of junction between auricles and ventricles.

Abdomen.—Stomach contained undigested food; at its great end was a large patch, of a black stellated appearance, which seemed to be the result of ecchymosis from some enlarged veins lying beneath the mucous membrane. Duodenum: mucous lining rather pale; the intestines generally contained fluid contents.

Remarks.—In one of these two cases, that of Davis, there seems to have been a previously morbid condition, evinced by the softened state of the brain, and the pale flabby appearance of the muscular structure of the heart; yet the fatal disease, and its causes, were most probably the same in both. The immediate cause of death, I consider to have been the congestion of blood in the lungs, and consequent obstruction to respiration; this state of things resulting from the absence of the necessary controlling nervous influence. There existed congestion of the vessels of the scalp, brain, and spinal column in both cases, greater in the more vigorous man than in the other. Accompanied with this congestion must have been pressure, and hence the paralysed functions

of the brain and spinal column, and the fatal withdrawal of their agency from the respiratory powers. Exposure to the sun, the cerebral circulation being probably in an excited state from previous debauch, is the usual explanation of the modus of the attack. But where is the first point of attack? Is the vitality of the body at once struck? or is the attack upon the nervous or vascular fibre of the brain? Judging from the symptoms of cases of disease that have terminated, some fatally, some in recovery, and from the morbid appearances after death, there cannot, I think, be a doubt that equal states of congestion and pressure, occurring in congestive fever and cholera, are recovered from. Whence then the rapidity and frequency of death in cases of coup de soleil, and the failure of the usual depletory remedies for congestion and pressure on the brain?—*Calcutta Quarterly Journal*, No. IV.

THE DENTAL CAPSULE.

To the Editor of THE LANCET.

SIR:—Having noticed in your columns of last Saturday my name, and the title of a paper which was read by me at the Medical and Chirurgical Society, on the "Persistent Nature of the Dental Capsule," foisted in as an introduction to some puerile and very irrelevant scraps of matter, totally unconnected with that subject, would you allow me to request the young gentleman who takes so much pains to betray his ignorance, to take some care before he again attempts to set up for critic, to try to comprehend what he is talking about, as he has avowedly not examined the matter at all, and in his extreme ignorance mistakes the inside of the enamel of a tooth for the outside.*

If it were at any time possible to grapple with a nonentity, in this case it would be useless, as the subject will shortly be more fully before the profession; and, moreover, as soon as leisure will permit, I intend to deposit in the College of Surgeons a series of preparations, such as were exhibited to the Medical and Chirurgical Society.

In the meantime, if any one wishes to examine for himself what I consider an instance of interesting and striking uniformity in the laws of animal organisation, let him submit any fresh human teeth, and especially those recently extruded, and consequently not yet subjected to much attrition, to the action of diluted muriatic acid (one part of acid to eight parts of water). In a few minutes a membranous covering will be seen to detach itself from the surface of the enamel; and, if then, the action of the acid be discontinued immediately, the enamel will be observed to be almost intact and entire. If the membrane now detached be removed, and the tooth be again submitted to the action of acid, the enamel will soon disappear, leaving the surface of the ivory bare, and no further separation of membrane takes place. The membranes found on the surface of the incisor of the ox and many other lower animals will be found thicker and more consistent. This membrane is the analogue to the thick crust of cementum on the grinders of the elephant and many other animals, and is exhibited in all varieties of thickness through the different classes of animals, from the state of a dense bony investment, to that of an extremely delicate atrophied membranous covering, as in the human species and the carnivora. I am, Sir, your very obedient servant,

ALEXANDER NASMYTH.

March 5, 1839.

* We are acquainted with the name of the gentleman by whom the remarks on Mr. Nasmyth's theory were written, and we believe that he is fully competent to treat of most matters connected with the structure and physiology of the teeth.

UTILITY OF THE ACT FOR THE REGISTRATION OF DEATHS.

To the Editor of THE LANCET.

SIR:—A circumstance which you have reported as having occurred in the Registrar's district for Sydenham, brings to my mind a case that happened in my own, and which I forward to you for insertion.

Being Registrar of Births and Deaths for the district of Camden-town, a woman called about a week or ten days ago, to register the death of a child. Upon inquiry as to the cause of death, she told me that the child was suddenly taken ill while at play, and fell down; medical assistance was called in; but the child did not speak again, and died very shortly afterwards. I consequently refused to register the death until an inquest had been held. Neither the Coroner nor jury thought it necessary to have the evidence of a medical witness, and consequently no cause for the death was discovered. The verdict was "*Natural death, by the visitation of God.*"

Other cases have occurred in which I have refused to register deaths until inquests have been held, in consequence of the death having been sudden and unaccounted for; and I believe similar instances are not uncommon in other registries. I remain, Sir, your most obedient servant,

JOSEPH CURTIS, Surgeon.

Camden-town, Feb. 22, 1839.

NON-MEDICAL CORONERS AND PRACTISING DRUGGISTS.

To the Editor of THE LANCET.

SIR:—I have taken the liberty of sending you the enclosed statement, to prove to the public the necessity of having a medical gentleman for the office of Coroner.

The case to which I allude is one of recent occurrence, and took place on Monday week. I occupy the house, 24, Regent-street, Westminster, and am a chemist and druggist. From what my assistant states, a girl called on or about the 30th day of January, and told him her mother would be thankful if he would prepare a little medicine for her brother, as he was very poorly in his bowels; accordingly he did,—composed of black draught, the spir. of nit. ether, and the solution of acet. of ammonia; and on the day following she called again, and said she would feel obliged if he would prepare another quantity, saying he was better.

On Friday afternoon she said he was much worse, and complained of severe pains in the head. My assistant then told her she had better go home and tell her mother she must apply leeches to the boy's head. She then went home, and returned, saying her mother would take two, for which she paid sixpence, saying her mother had no more money. In the evening she called and said he was not so well, and only one leech had taken; my assistant told her to go home and tell her mother to try again, and encourage the bleeding of the one that had taken. The day following (Saturday) she called again, saying her mother would be thankful if he would let her have more medicine, and trust her till her father came home at night with his wages; he said he could not. She then went home and returned with the money. On Sunday I went from home, when she called and wished my assistant to come down and see her brother; he said he could not then, but would as soon as possible. She came up again about 2 o'clock, and waited for him. When he went to the house he saw the father and two women in the room, and found the boy, from their statement, had met with an accident in the early part of the week, having then inflammation of the brain; he states that he desired them to have his hair cut, or kept close back, and the head to be bathed with cold lotion; just on his saying that, a loud knock was heard, when the mother said, "I beg your pardon, another gent. has seen him;" the answer he made was, "oh, very well." From that time to the day of his death, the Thursday following, he never saw him, neither did he prior to the Sunday, but heard that a medical man in the neighbourhood continued to attend him.

On the inquest, the father swore positively that I attended the child four days. I now, and have before declared, that I neither knew anything of the boy nor the transaction; they never sent for my assistant, or made any inquiry into what treatment the child had, though a medical man had been attending the child part of the week. A post-mortem examination has taken place; there was no medical evidence given or had, but a verdict of accidental death was brought in. This proves at once, to every person with common sense, the inefficiency of the Coroner and jury. I have sent this, which can be made use of in any way you think proper. I am, Sir, your obedient servant,

W. WOOLLEY.

24, Regent-street, Westminster,
Feb. 13, 1839.

POISONING WITH MONKSHOOD.

To the Editor of THE LANCET.

SIR:—If you are of opinion that the following case is of sufficient interest to merit a place in your pages, I shall feel much obliged by its insertion. I remain, Sir, your humble servant,

RICHARD DIX, House-Apothecary.
Derby Infirmary, March 1, 1839.

About half-past seven o'clock on Monday evening, 25th ult., a poor woman, of the name of M'Kinder, brought her little boy, aged 13 months, to the infirmary, and producing a portion of a fresh root which it had just vomited, and which, on examination, proved to be that of the aconitum napellus, or monkshood, said, that about an hour ago the child, after being put to bed, appeared to be in great pain, and began to vomit. On inquiry she learned that some of her elder children, who had been playing in her neighbour's garden, had taken thence some of this root and had given it to the child; she thinks this happened about five o'clock. The symptoms were vomiting, slow and intermitting pulse, dilated pupils, with great tendency to stupor, and apparent suffering of much pain.

The following treatment was adopted:—A teaspoonful of ipecacuanha wine was given every fifteen minutes, until the stomach was completely evacuated; after which brandy, compound spirits of ammonia, and strong coffee were administered at intervals, which, together with mustard plasters to the pit of the stomach, and the calves of the legs, the affusion of cold water from a height upon the occiput, and a turpentine enema, in the course of four hours, relieved the little patient from its dangerous symptoms. It afterwards took nutriment from the breast, fell

into a natural sleep, and, in the morning, was perfectly recovered.

The above shows the great advantage to be derived in cases of narcotic poisons from the exhibition of stimuli, both internal and external, after evacuating the stomach. It required the greatest watchfulness and attention to prevent the child from falling into a complete state of coma, and, in effecting this object, the cold affusion was particularly serviceable; its effect in rousing the nervous system were most marked.

THE

REDUCTION OF ARSENIURETTED HYDROGEN.

To the Editor of THE LANCET.

SIR:—In THE LANCET, of March 2nd, there appears a communication from "CANDIDUS," in answer to the remarks of Dr. Wilks, concerning the reduction of arseniuretted hydrogen: a part, also, of the letter refers to me.

Some little time since I mentioned, through the medium of your periodical, a very easy plan of reducing arseniuretted hydrogen; it appears, however, that my remarks were futile, as they had been previously anticipated by Candidus. I stated that the tobacco-pipe apparatus was more simple than either that of Dr. Wilks or the bent tube of Mr. Marsh; and, as such, I preferred it to both. Still, I am aware that scarcely any two persons manipulate alike; the instrument which one chemist would consider clumsy and inefficient may be well adapted to the habits of another. Under this impression I believe that the apparatus of Dr. Wilks may be very efficient in the hands of an experienced person, although, I grant, that an inexperienced or clumsy experimentalist incurs the danger of an explosion.

"Candidus" has enlisted into his cause some very learned remarks respecting the mutual diffusion of gases; perhaps, however, he has pushed the doctrine too far. It is, indeed, known, that gases *do* permeate each other; and, according to Mr. Graham, this permeation is in an inverse ratio to the square root of their densities; but Candidus must be aware that this diffusion requires a considerable time to be effected, which is, indeed, evinced by some of the most common operations of chemistry.

As your correspondent's mind appears to be so admirably adapted for groping along in the paths of detail, I am surprised that he is incorrect in his own department. How long has he been aware that the difference between the sp. gr. of oxygen and hydrogen is three times greater than that of arseniuretted hydrogen and hydrogen? The sp. gr. of hydrogen is .0694, of oxygen, 1.111, and of arseniuretted hydrogen, according to Dumas, 2.695.

Now $1.1111 - .0694 = 1.0416$

$2.6950 - .0694 = 2.6256$

$\therefore 1.0416 : 2.6256 :: 1 : \frac{2.6256}{1.0416} = 2\frac{1}{2}$ nearly.

It appears to me, then, that the difference between the sp. gr. of arseniuretted hydrogen and hydrogen, is greater than that of oxygen and hydrogen in the ratio of $2\frac{1}{2}$ (nearly) to 1.

Your correspondent, suffering, I presume, from the effects of his wounds, next directs his satire against me. First, he intimates in an ambiguous manner, that it is only by chance he has noticed my letter at all; next, he places the words "practical experience" between inverted commas, and then this Buonaparte of arsenic and tobacco-pipes assumes his full command, telling me that in my future "practical experience" I *must* not use mica! neither *must* I allow arsenious acid to deposit in the first instance. Now, during the period that I was chemical assistant to Mr. Pereira, and since that time, I have tried the experiment of reducing arseniuretted hydrogen in at least fifty instances, and I have invariably found that mica, which is transparent, and withstands the application of heat, infinitely surpasses either glass or china for the purpose of collecting the result of combustion. Whether arsenious acid or arsenicum be deposited depends entirely on the distance which the collecting surface is held from the jet. If made to intercept the flame then is deposited arsenicum; if held a little further away, then arsenious acid. If the collecting surface be moistened in various parts with different tests for arsenious acid, and left dry in others, then, by varying the distance between it and the jet, we may successively obtain depositions of arsenicum, arsenious acid, and all the characteristic precipitates developed by the action of tests on the latter, without further trouble. I am, Sir, your obedient servant,

JOHN SCOFFERN.

13, President-street, West,
March 4th, 1839.

*** Our correspondents will not complain, with reason, if we here close this controversy.—ED. L.

THE LANCET.

London, Saturday, March 16, 1839.

THE Colleges, Halls, Companies, and Universities of this kingdom have lately exhibited a degree of restlessness which is of favourable omen to the public interests. The monopolists appear to be uneasy in their seats of learning; qualms of conscience struggle in their breasts; they resort to a thousand artifices, recast their curricula, furbish their by-laws, and exhibit a thousand metamorphoses. But the soul remains unalterably the same; they never abandon usurped powers, never offer to share the privileges, the profits, the honours of office, equitably with their brethren. Like the honest, just, fair-dealing Company of Blackfriars, they vend their merchandise in the name of the medical profession; but the care of the profits, and all the proceeds, is made a matter of private arrangement by half-a-dozen Masters and Professors. The Licentiates are never embarrassed with accounts; and the self-perpetuating Presidents and Councils even save the members the trouble of expending their own money. We have not noticed any of the documents recently put into circulation by the Colleges, but this omission has not arisen from any indifference on the subject of medical education, as we have always viewed the interests of the student, as matters of paramount importance. The documents in question have evinced no comprehensive views of education, or of legislation; and the discussion of all the artifices of cunning corporations, or the crude conceptions of amateur teachers, would be a useless expenditure of time. It is our duty, however, to denounce a disposition that has been manifested in certain quarters to mislead the medical student, and to induce him to remain satisfied with the least possible amount of knowledge, under the pretext that much science can be of no use to him in practice. The object is to render the thoughtless youth a "subordinate" practitioner, and to make him sensible of his inferiority on all occasions when placed by the side of the "highly-educated" physician.

In reading of the debates and divisions in the Colleges, the utility of publicity, or rather the ill-effects of secrecy, in public Boards, has struck us forcibly.

What would be the effect of discussing Acts of Parliament with closed doors, and keeping Bills secret until they had passed through all their stages? Does not the printing of parliamentary Bills give to all parties an opportunity of examining them; all interests an opportunity of putting in their claims? And has not the publicity of the debates in Parliament a singular tendency to restrain the selfish, bigoted, ambitious partisan within the bounds of decency, as well as to make the people out-of-doors acquainted with the Acts passed? The reasons that vindicate publicity in these debates apply to the proceedings of all public bodies. *By-laws* for the regulation of education demand as much precaution, attention, and watching in their course as laws sanctioned by the general Legislature; and it is certain that if the sittings of the Senates and Councils had been open, the interests of the public would have been better consulted; fewer jobs would have been meditated.

A law, or a system of laws, can only be framed, with perfect coherence, by one individual mind; the practice of the great lawgivers of antiquity establishes this fact; and BENTHAM has shown under what guarantees it can be best accomplished; but every person affected by a code of laws, directly or remotely, has a right to a voice in their discussion, and the general sanction alone can justify their enforcement. If these principles had been attended to, the iniquitous by-laws of the existing medical corporations would never have passed. Irresponsibility and secrecy were the rocks on which the old corporations split; when a Faculty of Medicine, freed from the tram-

mels of the "middle ages," is founded, it must seek safety and support in publicity, —the source of responsibility in elective as well as in non-elective bodies.

With respect to examinations of students, under each head of the programme some of the leading points, on which the examination will turn, should be given. This is important; it answers in some respects the purposes of a definition, and the student sees what he has to expect. Under the present system he is left perfectly in the dark; he is told that he will be examined in chemistry, for instance, at the College of Surgeons, but it is quite clear that a very different meaning is attached by GUTHRIE and FARADAY, VINCENT and GRAHAM, to the word chemistry. The inconvenience is partly obviated by a summary of the points on which greatest stress will be laid.

Oxford and Cambridge have given an undue bias to education in England. In national universities the sciences of every day application in the business of life should form the basis of instruction, whilst the merely ornamental decorations of learning occupy a secondary place. This is the natural course of things. Society, like an individual, should seek first to satisfy its wants, and then to gratify its tastes. Oxford and Cambridge have led English education out of this practical direction; Latin and Greek are of no practical use to the agriculturist, the manufacturer, the merchant; they are not indispensable in the professions, and can only, in fact, be considered the portals to the Epicurean walks of literature; yet Latin and Greek are the foundation and the key-stone of our antiquated systems of education. This is much as if a man, naked and empty, sought flowers to deck his hair, and left the provision of food and clothing to Providence. The preference of a gilded ornament to utility is no mark of civilisation or refinement. The savage exchanges a pig for a few beads, and rejects an axe for a red feather,—just as natural philosophy, chemistry, and physiology have been bartered at the Colleges for the pageantry of Latin learning. There is, perhaps, too much leaning to the "tongues" in the Report of the Sub-Committee of the University of London,—we mean relatively to the demands of other departments of learning, as we do not deny the absolute utility of a knowledge of any language, even of Latin, sterile as is its literature in great works, compared with the literature of this country and the literature of Greece.

A great improvement will be effected in general education when natural philosophy, chemistry, vegetable and animal physiology, are made indispensable preliminaries to the degree of Bachelor of Arts in this country. Nothing will exercise so salutary an effect on the public mind,—nothing will be so likely to cure the world of the follies of quackery.

No attempt should be made to regulate the order of study, or to determine the mode of instruction, in national regulations. The resolution that no candidate shall be admitted to the examination for the degree of Doctor of Medicine, unless he have produced a certificate that he has been a student during *two* or *five years* at one or more of the recognised institutions, is an absurd interference with the freedom of instruction.

The necessity of practical examinations in medicine and surgery is evident. The student should be tested fairly and publicly, in a verbal and written examination; but, besides this, the examiners should take him to the dissecting-room, and witness his powers of discrimination and action in the clinical wards of an hospital. To this point we have frequently adverted.

Monopolies in education, like protecting duties and bounties in commerce, have a remarkable, and what appears, at first sight, a paradoxical, effect on the monopolists themselves. They lead to the ruin and decay of the protected, favoured institutions. The medical professors of Oxford and Cambridge had salaries allotted to them from the public funds, and their graduates had extraordinary privileges granted to them

in England. What was the result? The Oxford and Cambridge professors found that their salaries had no connection with their duties,—the tutors rose the terms,—the graduates found that all places of honour and emolument were opened to them without exertion, without study, without any tincture of science. Medical education became a mere name in the English Universities; and, strange as it may seem, the whole medical education of the great majority of English physicians was thrown into the hands of the Scotch Universities. The MONROS and GREGORYS had nothing to trust to for success but the excellence and cheapness of their instruction.

We had marked a passage in Dr. MUEHRY's work which sets the English Universities in their true light. The indolent monks of these moss-grown halls and colleges surprise a foreigner; he finds himself in the midst of the dark ages, and begins to ask why medicine is not taught by the professors of medicine, and why graduates get their medical knowledge everywhere but at Oxford and Cambridge, besides a variety of other curious questions. Medical education is, in fact, on the same footing now in Oxford as it was in the time of LINACRE. Time has "wrought wrinkles," but no "change on its brow;" there is no sign of rejuvenescence:

Such as creation's dawn beheld, it rolleth now:

And this city of the dead, exhibiting to the life the image of the monastic institutions, with Fellows who do not marry, and make vows to intellectual sterility; this Herculaneum of learning would be curious, we say, as a piece of Archaeology, in which the dark ages were displayed, if the establishment was not a wasteful gulf, in which more money than would thoroughly educate every individual in the nation was squandered. The income of Oxford is nearly half a million; of Cambridge, 376,548*l*. The total amount expended by the French Minister of Public Instruction in 1838 amounted to 527,152*l*., for universities, schools, and every branch of education!

WE have received documents respecting the workhouse of the Wimborne and Cranborne Union. The facts are clear; further discussion is unnecessary; and we have but two remarks to offer. These inquiries into their own conduct, by the Assistant-Commissioners, wear a very farcical appearance. Here, in a Union workhouse, under the eyes of Colonel A'COURT, 13 unfortunate paupers were crowded into a room 19 feet 7 inches long, 12 feet 5 inches broad, and 8 feet 6 inches high; and there kept for a considerable length of time. Other parts of the workhouse were also crowded. Small-pox attacked several, and destroyed three or four, of the children, whose death, by some disease or other, was inevitable under the circumstances. The fact is made public, and the Assistant-Commissioner proceeds to the spot, examines the servants, and calls before him the poor inmates, who can be deprived by him and the Guardians of their daily bread. The result may be foreseen; Mr. PLACE's statements are impeached; the Assistant-Commissioner and the Guardians are honourably acquitted—by themselves; nobody is disappointed; nobody is deceived.

It may be all very well for Mr. BARTLETT to plead ignorance of the fact that impure air and crowded lodging-rooms destroy life. That gentleman may chance to know less of the admeasurement of wards, and of cubic feet, than of Cloth-measure and cottons; but should an Assistant-Commissioner be acquitted under the same plea? What, we would ask, are the qualifications of these military heroes for the offices of Assistant-Commissioners? What has been the study of their lives? What is the art of war but that of destroying human life? A very sorry preparation for their presumed duties! And what a falling off is here? In former days British officers sought honour in the cannon's mouth,—wore laurels which they had won in the field of battle, or at the deadly breach; but the age of "chivalry" is gone, and now Colonels, at the head of Guardians, and Clerks of Unions, and Relieving-officers, are

beleaguering the mud walls of cottages, leading cripples and aged women captive, defending workhouses, and killing and wounding, *not* foreign foes, and combatting, *not* with the sword, but with water-gruel. This is a new mine of military glory. The Horse Guards must be alive to the merits of these distinguished officers: in case of war they will indubitably be placed at the head —of foraging parties. The independent labourer's pig, and hostile henroosts, can scarcely escape their practised eyes. And as *transit gloria mundi*, their "fame, which is in all the" workhouses, will ensure to them military honours: but let them be "buried darkly, at dead of night."

NUMEROUS complaints have been made to us concerning the manner in which business is conducted at several of the Medical Societies of the metropolis. One correspondent laments the tendency which is exhibited by some members of the Medico-Chirurgical Society to occupy the whole time of meeting with interminable papers and memoirs, thus excluding the possibility of oral discussion: on the other hand it is lamented that the "heads" of the profession who congregate together at the Medico-Chirurgical Society are too dignified to take any part in the few discussions which may arise upon important questions of medicine or surgery. We shall, on another occasion, take a view of the different Medical Societies in this metropolis, and examine how far the science of medicine is likely to be advanced by their present mode of discussing medical subjects. As to opening the mouths of the "magnates," we fear that it is beyond our power: we do not pretend to rival BALAAM'S angel.

Medicine and Surgery one inductive Science; being an attempt to improve its Study and Practice, on a Plan in closer Alliance with inductive Philosophy, and offering, as First Fruits, the Law of Inflammation; addressed particularly to the Medical Student and the Profession, but easy and intelligible to the Public also: the whole being the Introduction and First Part of a System of Surgery. By GEORGE MACILWAIN, Surgeon, &c. &c. London. Highley. 1838.

THE author of this work is already known to the public by his essays "On the Unity of the Body," "On Hernia," "On Stricture of the Urethra," and "On the Constitutional Origin of the Various Forms of Porrigo." He now appears before us on a more extensive scale, and has favoured, not only the medical student and the profession, but also the PUBLIC, with a volume of 567 pages, being only *part* of a system of surgery. In a short preface Mr. Macilwain particularly expresses himself as being most desirous that the *public* should be informed on medical matters:—

"I should be vexed to feel that the book contained a single sentence which was not intelligible to every person of *moderate education*. I profess not, indeed, to instruct the *whole mass*; this, I think, cannot be done yet; we must teach 'down stream,' as it were; and, in time, that general intelligence will be diffused which can alone raise a glorious profession to that station which the high nature of its objects and its unquestioned utility alike deserve."

How does Mr. Macilwain commence the arduous task he has arrogated to himself? First, by telling "every person of moderate education," that the labours of "Haller, Hunter, Cruickshank, Zinn, Walther, Sœmmering, Scarpa, Bichat, Tiedemann, Cuvier, Charles Bell, and others equally illustrious," have advanced "medical science" but very little since the days of Celsus, "about 1800 years ago!!" In proof of which our black-letter author quotes the opinions of his Apollo on "directions for the preservation of health," and on "the symptoms of stone." But this is not all:

"In fact," says Mr. Macilwain, "anatomy of any kind is only useful as *helping* you to understand the natural uses or functions of the various parts of the body (physiology), and the causes of those departures from them which constitute disease (pathology); and it is requisite to remember also, that anatomy is only *one* of the means for the attainment of these ends."

This is teaching "down stream" with a vengeance. If this be the estimation in which our author is desirous that anatomy should be held by the "whole mass," farewell to surgery and medicine as a science, even as "one inductive science;" and welcome the ancient regime when the *arteria aspera* was a blood-vessel, and the spinal chord the *marrow of the vertebræ!*

"But in what way," asks our author, "has our power of relieving disease been increased by the fact, that there are, going off from the spine, certain nerves of motion and certain nerves of sensation? Sir Charles

Bell's experiments, in my opinion, have been regarded with more importance than they deserve."

It is quite clear that this old-womanish observation was made in the very "ignorance on medical matters" which Mr. Macilwain so much condemns in his preface: viz., not "the simple absence of knowledge," but ignorance "accompanied with all sorts of error." Sir Charles Bell never asserted that any nerves went off from the *spine!* Much less did this intelligent surgeon state that the motor and sensitive roots of the nerves connected with the spinal chord "*went off*" from this their central organ. Ere Mr. Macilwain essayed to exhibit, in the light he has done, the discoveries of Sir Charles Bell to the persons of "moderate education" he is so anxious to instruct, he should, at least, have made *himself* well acquainted with their nature beforehand, and not have committed to print so loosely an account of experiments which every scientific medical man must admire, and particularly the *practical one*. The importance to the practitioner of an acquaintance with the respiratory system of nerves, and with the nerves of the reflex-motory system, has been too often illustrated in the volumes of this Journal to require any further observations from us on this head. In short, the volume before us professes to be a popular production, and accordingly its author decries anatomy, when considered as the foundation of surgical and medical knowledge,—states, "in fact, that morbid anatomy has been regarded as synonymous with pathology" (!)—that "experiments on living animals have hitherto proved as scientifically unproductive as they are morally improper" (!)—and winds up the whole with familiar discourses on fistulæ, erysipelas, boils, carbuncles, &c. &c. Discoveries in this spirit may suit the taste of Mr. Macilwain's hearers at the Polytechnic Institution, in Regent-street, but with the medical public they must soon find their proper level, if perused.

MEDICAL SOCIETY OF LONDON.

The Society held its anniversary meeting, for the election of officers, on Friday, the 8th, when Dr. Leonard Stewart was elected President, *vice* Mr. Bryant. Mr. Clifton, Treasurer, *vice* Dr. Shearman, resigned. Mr. Pilcher delivered the Oration, the subject of which was the "Influence of Animal and Vegetable Respiration on the Atmosphere." At the ordinary meeting, on the 11th, the evening was occupied by votes of thanks to the various officers of the Society, and the answers thereto.

WESTMINSTER MEDICAL SOCIETY.

Saturday, March 9, 1839.

Mr. Hale Thomson, President.

TUBERCULAR KIDNEY IN AN INFANT.—CONCLUSION OF THE DEBATE ON MALARIA.

Mr. Streeter exhibited a kidney containing several patches of tubercular deposit, taken from a child seventeen months of age. The child had been ill three months, suffering under symptoms of mesenteric disease. Latterly there had been effusion about the backs of the hands and ankles; the fæcal evacuations were unhealthy, and the child suffered from great restlessness, which was increased when it was in the recumbent position. There were no indications of disease about the urinary system; the urine was not tested. After death the kidney was found to contain patches of tubercular matter; the other kidney was healthy; the mesenteric glands were diseased; the lungs were healthy; the brain was not examined.

The President had lately examined a child in the Westminster Hospital, of the same age as Mr. Streeter's patient, and who perished from a similar disease of the kidney. In this case there was continued pain in the penis, and it was supposed, at one time, that there was a stone in the bladder.

Dr. Addison said the only thing remarkable in Mr. Streeter's case was the very early age of the patient. In subjects somewhat older the disease was not uncommon.

Dr. Brooke stated that, in a case of disease of the kidney, consisting of a conglomeration of cysts, there were, for a long period before death, excessive irritability of stomach, and the discharge of a dark, fœtid secretion from the bowels; of this secretion the intestines were found full after death.

THE DEBATE ON MALARIA

was resumed.

Mr. D. O. Edwards brought forward some statistical facts to prove that the locality surrounding the new palace was much freer from the effects of miasma than it was a hundred and twenty years ago. This he attributed to the sources of malaria being removed by the establishment of sewerage and drainage, and the greater cleanliness of the streets. If we failed to arrive at an accurate knowledge of the nature of malaria, at all events we knew how to prevent its effects, as by widening our

streets and carrying off all filthy deposits. The statistical facts he alluded to were copied from the books of the Westminster Hospital, by which it appeared that in 1833, the year before the patients were removed from the old hospital, near Buckingham-gate, there were admitted 764 patients, and of these two only were labouring under intermittent fever, being in the proportion of 1 to 382. In the year 1720, of the 108 patients who were admitted, 22 suffered from intermittent fever, being a proportion of 1 in 5. In 1721 there were 271 patients, and of these 41 had ague, being a proportion of 1 in 6½. In 1722 there 333 patients and 45 cases of ague, being 1 in 7½. In 1723 there were 35 cases of ague in 270 patients, being 1 in 8. It was curious that not a single case of continued fever was admitted during these four years, while in 1833, the number of patients with these fevers bore a proportion of nearly 1 to 24 on the entire number of admissions.

Dr. C. J. Williams considered, that the attempts which had been made to prove malaria a definite gas, had failed, inasmuch as the most celebrated chemists had been unable to detect any difference in the constitution of the atmosphere existing in the neighbourhood of marshes, from that in other situations. Chemists had, however, found, that on collecting light carburetted hydrogen gas from stagnant pools, and then passing it through water, a putrescible matter was left in the water, which decomposed very rapidly. It had been recently proved that the various kinds of fermentation depended upon the germination of organic molecules, and he thought it probable that the production of these molecules in putrescent vegetable matter, might so operate on the animal frame as to induce intermittent fever. Regarding the sources of malaria, whatever its nature might be, they were essentially dependent upon stagnant moisture and heat, and the decomposition of, probably, a particular kind of vegetable matter. For the prevention of malaria, drainage and building over the land were advisable. Strong, powerful chemical antiseptics, such as chlorine, were always of service.

Dr. Chowne considered that the source of malaria depended upon evaporation from the surface going on during a peculiar change, which was proceeding between heat and vegetable matter in decay. He thought that it did not arise in any way from diseases in vegetables, or it would not be present only when the vegetable was in decay; odour was not essential to its presence, neither were fogs prevalent in malarious districts in a greater degree than in mountainous regions. He thought there was an identity between the causes which produced intermittent and continued fevers in marshy districts. Regarding the banks of the Thames, he believed that the reason why this locality was favourable to the production of malarious disease, arose from the immediate vicinity of marshes, and not from any evil effects of the river itself. Parts of the banks of the river, near which no marshes existed, were free from ague, or other effects of malaria, and this, too, in the very district reprobated as unhealthy by Dr. Addison, viz., Scotland-yard, and other places near Northumberland House.

Dr. Addison, at a late hour, rose to reply, the usual time of the Society being considerably extended, in order to draw the debate to a close this evening. He had, comparatively, little to do, because the various speakers had answered one another in many instances. He had purposely avoided, as he had stated, all allusion to the influence of animal matter; he, therefore, left that still untouched, by merely remarking that there was a good deal to disprove that it had any injurious effect. He thought that stagnation of the air was rather an accidental than an essential cause of malaria, and he did not attribute so much to its influence as did some of the speakers. The particles of the matter acted upon might, or might not, be stagnant; thus mud was stagnant, but if it were a moving mass, exposed to the sun's rays, the malaria would be produced as effectively as if the mud were perfectly still. The facts brought forward by Mr. Edwards proved how unhealthy the locality of Buckingham Palace was, when, in one year, one patient in five, admitted into a neighbouring hospital, suffered from ague. Throughout the whole of the discussion one great error had been predominant, that of considering ague an essential concomitant of the effects of malaria; it was to prove the very reverse of this that he (Dr. A.) had introduced the subject. The most fatal cases resulting from malaria were those of chlorosis, connected with diseased spleen, and in these no ague was present. He did not agree with Dr. Chowne that the causes of intermittent and remittent and continued fever were identical. Dr. Addison then related two cases in which the symptoms simulated those of severe cerebral lesion, occurring in females in a malarious district, and in whom, after the failure of depletion, large doses of quinine speedily afforded relief, and concluded his observations by urging the necessity of inquiring, in the diagnosis of disease, whether it were possible for it to arise from malaria, a question which he believed medical men too frequently neglected to put to themselves.

At the meeting this evening (Saturday) Dr. Bird will make some observations on the *modus agendi* of an atmosphere vitiated by carbonic acid gas on the animal economy.

BRITISH MEDICAL ASSOCIATION.

THE minutes of the last meeting having been read and confirmed, the following gentlemen, being proposed, were elected members of the Society:—

Thomas Chapman, Esq., Wandsworth.

Thomas T. Campbell, Esq., 18, Burton-crescent.

The Secretary read a letter received from the Nottingham branch, giving the names of thirty-four gentlemen who compose that district branch, and enclosing the printed circular issued by the Council to the practitioners of that district.

A pamphlet entitled, "Political Medicine, &c." was laid on the table, presented to the Society by its author, H. Maunsell, M.D., of Dublin.

A letter was read from Mr. William Rendle, of White-street, Southwark, respecting a contribution to the Medical Coroner's Fund.*

Some discussion took place relative to the presentment of a petition to Parliament against the proposed alteration in the law of copyright, which is, in substance, similar to the one which the Society prepared for presentation in the last Session of Parliament.

The Secretary read the Report of the Deputation which had waited upon the Poor-Law Commissioners, on the subject of the disgraceful system of tender for medical appointments, &c. &c. It was ultimately resolved that a Sub-committee be appointed to consider the printed circular submitted to the Council by the Poor-Law Commissioners (for which see LANCET, March 9th), and to draw up a plan, in compliance with the request of the Commissioners, for a better attendance on the poor, a mode of electing medical officers, &c.; to be placed before the Council at their next meeting, March 19th.

A letter was received from R. Purvis, Esq., of Greenwich, justly complaining that the degrading system of tender for medical attendance on the poor had been resorted to no later than last week, in that district, when he lost his election owing to the appointment of a person who had offered to take charge (?) of the poor for much less than Mr. P. had received for the past year.

The PRESIDENT mentioned to the Council that he had lately written to Lord John Russell, requesting information as to the printing of the remainder of the medical evidence, recommended to him by the deputation who waited upon him last session; but, as yet, he had received no answer.

It was resolved unanimously, that the weekly journal, "The Dublin Medical Press," should be taken in by the Association.

The meeting having resolved that the half-yearly general meeting should take place on Monday evening, the 25th March next, adjourned.

* The Council of the British Medical Association take this opportunity of expressing their regret that any member of the profession should have been prevented adding his mite TOWARDS defraying the expenses of the late contested election for Coroner, the more especially as the Council of the British Medical Association never intended to arrogate to themselves such a power as that of involving the individual members of the Society (of which the Council is the organ) in the *whole* expense of the election. The latter part of the 4th resolution passed at a meeting of Council on the 22nd of January, ult., speaks only "of FURTHERING, by a *general* subscription, the election of Mr. Wakley, free from expense to that gentleman."—*Sec. B. M. A.*

MR. WAKLEY AND THE MEDICAL OFFICERS OF THE MIDDLESEX HOSPITAL.

(*From the Morning Post of March* 9, 1839.)

AN inquest was held on Thursday, March 8th, at the above institution, before Mr. Wakley, on the body of Joseph Witman, a plasterer, who, as it appeared from the evidence, came by his death from a fall, on Tuesday last, from a scaffold, in Berwick-street Chapel, Soho.

Mr. Merriman, the senior house-surgeon of the hospital, said:—Deceased was admitted at about two o'clock on Tuesday; I saw him in about five minutes after his admission; he was then dead; his head was opened yesterday; there was a fracture of the base of the skull, and laceration of the brain opposite to the fracture; I have no doubt but that the injuries discovered after dissection caused the death of the deceased.

Verdict—"Accidental death."

After the inquest Mr. Wakley called in the house-surgeon, and asked,—Is it usual in this hospital for the visiting surgeon of the week to order the internal examination of bodies before an inquest is held, and without any order from the coroner?

Mr. Merriman.—It is.

The Coroner. Then I must request that the practice may be discontinued, for in many cases it is of importance that the jury should see the body in the state in which it was when life departed. They may found many questions on the untouched body. In cases of dangerous accidents, requiring immediate treatment, does the house-surgeon operate?

Mr. Merriman. No; by the regulations of the hospital he cannot; he must send for the visiting surgeon.

Coroner. Where do the visiting surgeons reside?

Mr. Merriman. One lives in Burlington-street, another in Great George-street, and a third in Fitzroy-square.

Coroner. So that you can do nothing to a patient until one of them arrives. They may be all out visiting their private patients, and a long time may elapse before they can be found.

Mr. Merriman. I must do the best I can in their absence.

Coroner. How are the house-surgeons appointed.

Mr. Merriman. By rotation, after examination, from the dressers.

Coroner. And how is the appointment of dresser obtained?

Mr. Merriman. By purchase.

Mr. Wakley then said, it was very necessary that there should be a resident surgeon in every hospital. Although the revenue of St. Thomas's Hospital was 40,000*l.* a-year, and that of Guy's about 50,000*l.*, yet the chief surgeon of one of those institutions resided in Bruton-street, Berkeley-square, and of the other in Lincoln's-inn-fields, or perhaps he was often to be found at his country house, near Barnet. For the future, at inquests in cases of difficulty, he should not be satisfied with the attendance of the house-surgeon, but should summon the visiting physicians and surgeons of the hospital under whose care the deceased patients had been admitted.

The jury expressed their strong approval of these remarks.

UNIVERSITY COLLEGE HOSPITAL.

IMPERFORATE VAGINA.—OPERATION.—DEATH.

C. D., aged 29, servant girl, was admitted Nov. 2, 1838, under the care of Mr. Liston. Two years ago she was seized with labour, and gave birth to an illegitimate child. The labour was difficult and protracted, but no instruments, that she is aware of, were used. She afterwards experienced severe pain in the genitals, and after a few days a slough came away, followed by much purulent discharge, which continued for some time, and she was confined to her bed for several weeks. Since that time she has never menstruated, but at intervals of a month she has experienced pain and tension about the loins and vagina, which attacks gradually increased in severity and duration. Latterly there were added, too, sickness and headach, and her situation was altogether very distressing.

She now complains of great pain, and is so weak as to be incapable of any exertion. The vagina is found to be imperforate at its orifice; the uterus was felt full, and distended above the pubis, and a tumour can also be felt by the finger in the bowel. Mr. Liston told her that, in all probability, she might be relieved by an operation; at the same time he pointed out to her that some risk might ensue from her undergoing it. The patient being in her present state very miserable, and, moreover, wishing to get married, consented to undergo the risk, and chance whatever danger might accrue from it.

Nov. 5. The patient being placed in the position adopted for the performance of the lateral operation of lithotomy, and the bladder emptied by the catheter, Mr. Liston introduced the forefinger of the left hand into the rectum, and then passed a trocar through the tissue blocking up the vagina, guiding it by the finger in the rectum, till it reached as far as the canula would permit. The trocar was withdrawn, but nothing followed but a small quantity of blood. Mr. Liston not deeming it advisable to pass a longer instrument at that time, the canula was left in the wound, and the patient, being released from the constrained position, was placed in bed.

6. The canula was removed, and a piece of gentian root introduced into the wound, and fixed there by means of a bandage.

7. The gentian root was removed, and a larger piece introduced. Complains of uneasiness in the part, and great pain in the loins.

10. Symptoms of peritoneal inflammation presented themselves, which, in spite of the most active treatment, terminated fatally on the 13th.

After Death.—The general appearances of peritoneal inflammation were present in a severe degree. The uterus, vagina, bladder, and rectum were removed from the pelvis. The uterus was found to be greatly distended with fluid, and on opening it about a pint of a dark, grumous-looking fluid was removed from its cavity. The vagina was found to be perforate for about an inch and a half from the os uteri, and distended with the same fluid, which accounted for the tumour which was felt on introducing the finger into the rectum. The opening made by the trocar extended about three inches along the course of the vagina, and only about one-eighth of an inch of tissue intervened between its termination and the collection of fluid. On passing a probe along the track of the trocar only a thin membrane seemed to intervene between it and the part of the vagina which was perforate. The bladder and rectum were perfectly sound and uninjured.

Mr. Liston said that it had been questioned whether the uterus could ever be distended with menstrual fluid, but this appeared to be the case in this instance. The

operation was nearly successful, and would have terminated probably in a cure, but for the unfortunate occurrence of the inflammation. He had intended, after the track had been dilated sufficiently to admit the finger, to introduce a larger trocar, and thus, as in some other similar cases which had come under his care, he doubted not a cure would have been effected. It now appeared that the patient had laboured under extensive phagedenic ulceration of the genital organs previous to, and at the time of, her accouchment.

ST. GEORGE'S HOSPITAL.

DISEASES OF THE NERVOUS SYSTEM.

(*Continued from page* 855.)

HYSTERIA.

Elizabeth Nuna, aged 22, came in on Dr. Seymour's admission day, with severe pain in the left hypochondrium, which, she says, is increased on pressure. She has globus hystericus, and can laugh or cry "at her own sweet will." She says that her health, for some years past, has been "weakly." The skin is hot and "doughy" to the touch, the pulse is weak, the tongue slightly furred, and the catamenia she reports as being "profuse" and regular, which, judging from her other symptoms, is very unlikely to be the case. To relieve all these anomalous symptoms, Dr. Seymour ordered her,—

Ammoniated tinct. of valerian, 1 drachm;
Carbonate of ammonia, 3 grains;
Camphor mixture, 2 ounces. To be taken twice daily. She was ordered also to take,

Aloes and myrrh pill, 10 grains, twice a week. The warm hip-bath was to be used every morning, and her appetite was to be satisfied with ordinary diet. She persevered in this plan of treatment steadily for a fortnight, at the end of which time she was much improved in every respect, and, in addition to her ordinary diet, which was very unsatisfying to her improved appetite, Dr. Seymour ordered her to have two ounces of port wine daily.

June 30. She has gone on steadily improving in every respect, and, since she has taken the port wine, her bodily strength is much increased.

July 17. She is, and has been for some days past, much troubled with flatulency at the stomach, and, on inquiring of the nurse, we have learnt that, contrary to the previous statement made on entering the hospital, the catamenial secretion has re-appeared, after a nine month's leave of absence. The epigastric flatulence being, therefore, the only symptom that called for any interference, Dr. Seymour ordered the following remedy for its relief, and which, in his hands, has never failed of having the desired effect:—

Confection of rue, 3 drachms;
Infusion of chamomile flowers, 1 pint.
To be used as an enema for the two following nights at bedtime.

24. The rue injection relieved the distressing flatulency, but she still remains very weak, and complains of many hysterical symptoms, to relieve which the physician ordered her to recommence the *aloes and myrrh* pills, and the use of the bath, and to take one ounce of the *compound steel mixture* twice daily

Aug. 9. Much the same; she is to leave the hospital, having received all the relief which medicine and diet will afford to the protean malady under which she laboured.

NEURALGIA.

William Matthew, aged 33, gave the following statement of his symptoms on the day after his admission:—About ten days ago, after standing in the water for some hours, employed in the common occupation of hedger and ditcher, he was seized with a violent pain in both legs, which lasted, with great severity, for some days. This subsided in the right leg after a time, leaving the left one very cold and painful, and covered with a dark-purple blush. The pain appears to follow the larger vessels of the extremity, and totally prevents his using the limb. He was ordered to go into a tepid bath at night, and on the following evening to take:—

Chloride of mercury, 3 grains;
Opium, half a grain, at bed-time. This to be followed up on the ensuing morning by a senna draught.

16. He was ordered to have a vapour bath every other day.

19. The pains are greatly relieved; he perspired profusely from the bath, which he was ordered to have only twice a week.

23. He is much better, and complains very little of the pain in the leg, but feels very weak.

24. Some diarrhœa is present, to relieve which the apothecary ordered him to have an immediate dose of calomel and opium, followed by a dose of castor oil.

26. The diarrhœa is better, but he is still very weak.

28. The pains have almost entirely left the legs and gone to the thighs; the pulse is 90, small and weak; the tongue clean and moist; the bowels open.

30. The pains have left the legs entirely, and now they only affect the anterior and inner surface of the right thigh.

July 10. The pains are better and the feet not so cold, and if he walks much the ankles swell. In consequence of this amelioration a "P" was put upon his card.

19. Left the hospital this morning, ex-

pressing his thanks for the attention he had received, and nearly well in health.

SCIATICA.

John Bennett, aged 34, and a farrier by trade. He complains of great pain along the course of the sciatic nerve, extending from the hip down to the ankle-joint. He is only able to put the toe down to the ground. There is no numbness of the foot, the abnormal state of nervous sensibility not appearing to proceed beyond the ankle-joint. The pulse is 84 and tranquil; the bowels are regular. He has suffered for two months from severe pain, and his countenance appears worn and haggard. He was ordered to take,—

Compound ipecacuanha powder, 10 grains, every night at bedtime, with a *senna draught* early on the next morning.

25. No improvement. Dr. Seymour ordered,—

Tincture of aconite, 2 minims;
Water, 1 ounce. To be taken three times daily.

A *senna draught* to be taken early every other morning.

28. He thinks the pain is decidedly better. The tincture of aconite was ordered to be omitted, and five grains of *comp. ext. of colocynth*, to be taken every night.

30. He is quite free from pain during the day, but he complains that it returns at night. To go on as before.

Nov. 3. The pain continues to decrease; the bowels are open; the tongue white and furred. Ordinary diet.

6. The pain is better, yet it every now and then affects the right leg, reminding the poor man of the pains of other days.

13. Since the last report he has had severe pains affecting the branches of the lumbar nerves which to-day are much increased. In consequence he was ordered to be cupped, which gave some slight relief to the local pain, but left some which still remained severe down the back of the thigh. The aconite was again ordered in the same dose as before.

15. He is no better, and still suffers much sciatic pain from the hip to the knee. The dose of aconite was, therefore, increased to three minims.

15. He is much better in every respect; the pain is much lessened, and he can bear more weight upon the leg than he has hitherto been able to do. There is no giddiness of head from the medicine, and he states that he feels more comfortable in bed than when up. The medicine was ordered to be continued.

30. He has neither pain to complain of nor complaint to make, and he has recovered the power over the limb completely. He was ordered to leave the hospital on the following day.

This case was under the care of Dr. Macleod, who held his head higher than ever in the vain-glorious satisfaction of having cured a most painful and intractable complaint by a medicine for the nature of which he referred the pupils to the apothecary, who, in his turn, professed entire ignorance on the subject, as there was no printed copy of the hospital pharmacopœia kept, a fact which we believe is a truth.

HYSTERIA SIMULATING EPILEPSY.

Charlotte Ely, aged 22, was admitted Oct. 25th. From the report which the nurse received from those who brought her into the hospital it appears that she was found in a fit in the streets on the night previous to her admission. The fits to which she is subject are very strong, and are said to occur several times in the day. The pulse is 84, and the catamenial secretion is said to be irregular in appearance and scanty in quantity. She was ordered,—

Aloes and assafœtida pill, 5 grains, three times daily; and to have twelve leeches applied to the temples.

26. The leeches have bled freely, and the bowels have been well purged, but the fits remain unmitigated in frequency and severity. The pills were ordered to be continued, and she was to lose twelve ounces of blood by cupping from the back of the neck.

27. The head is much relieved by the cupping, but she has had several fits this morning, and complains much of globus hystericus; the bowels are open. The pills to be continued.

28. She has had four fits this morning; she recovers her senses perfectly the moment the fit has passed off; great headach, with throbbing in the temples.

Ammoniated tincture of valerian, 40 minims;
Camphor mixture, 1 ounce and a half; to be taken three times daily. The pills to be continued, and a dash of cold water to be thrown over her daily.

Nov. 3. She has continued the use of the above remedies without, however, deriving any benefit from them. The night before last she fell out of her bed in a fit, from not being properly watched by the nurse in attendance. Yesterday she was very low and depressed in spirits, and cried and sighed very much, complaining, at the same time, of a very severe pain in the head, which she says was more acute than she has ever before experienced. In the evening she had another severe fit in which she talked very incoherently, and struggled and plunged with great violence. When she recovered she was perfectly forgetful of all that had passed, and complained of the same agonising headach as before. Ice and ether were applied to her head, from which

she experienced much relief, but no mitigation of pain whatever; the tongue is pale, moist, and tremulous; the bowels are open; pulse 84; skin warm; and she expresses a great wish to be cupped again, a procedure which the physician in attendance does not consider advisable, but ordered her to have ten leeches applied to the temples, and an assafœtida enema to be exhibited in the evening; she was also to take:—

Infusion of valerian, 5½ ounces;
Ammoniated tincture of valerian, half an ounce. Two tablespoonfuls every four hours.
A *senna draught* to be taken early tomorrow morning, and ice to be continually applied to the head.

4. The head is somewhat better; she has had no return of the fits. The ice to be omitted, the other medicines continued.

6. She had a return of severe pain in the head last night, and has had two severe fits this morning, when the ice was immediately applied. On our visiting her we found her still suffering from severe headach which, she says, the ice no longer relieves, but finds greatest relief from the leeches. The bowels are freely open; pulse 84 and firm; skin dry and hot. Twelve leeches were to be applied to the temples, and *pulvis dietamni comp.*, two scruples, to be taken three times daily.

11. She has had several severe fits every day since the last report, and for the last two days the severe pain in the head has returned as violently as before. The tongue is pale and furred, and the bowels open. A blister was ordered at the back of the neck, and the powder to be continued.

13. The fits continue to recur as regularly during the day, but intermit in frequency during the night. During the attack she is perfectly insensible to surrounding objects, and talks incoherently of the remedies used for her relief, especially of the leeches, in the efficacy of which she appears to have more faith than her physician, who believes that the rule of every wearer best knowing where the shoe pinches, is one admitting of an exception in the case of his poor patient. The dose of the powder was increased to one drachm, three times daily, and an assafœtida enema to be exhibited every evening.

15. Suddenly last night, without the supervention of any fit, she became speechless, having complained of severe pain in the head for some hours previously. She still remains speechless but perfectly sensible. Pulse 86; tongue clean; the bowels freely open yesterday; the catamenia are present:

Compound galbanum pill, 5 grains every four hours.

17. She tried to swallow the pills but was unable to do so. She has partially recovered her speech this morning. She had a severe fit last night, during which she struggled violently, but did not talk or make any noise. She still complains of that severe pain at the top of the head, which the leeches (of which she has had repeated applications) seem only to relieve for a short time. The bowels are open, the catamenia still present.

Assafœtida mixture, 1½ ounces three times daily.

18. The pain in the head slightly relieved; the bowels confined.

Aloes and assafœtida pill, 10 grains, every night.

20. She is now seized with fits which last about half an hour, during which she remains perfectly insensible, but does not struggle. The headach is increased, but the aspect of the countenance is manifestly improved. Ten leeches were to be applied to the temples, the medicines were to be continued, and she was to have fish for dinner.

23. She had a severe fit last night; the pain in the head the same. Complains of severe pain in the epigastrium which, she says, is increased on inspiration; the countenance is not anxious; the pulse 76 and soft.

29. She remains much the same in every respect; the same remedies, both internal and external, have been persevered in without any relief being obtained. She complains of great pain over the epigastrium, and the bowels are confined. The aloes and assafœtida pills to be persevered in.

30. She complains of the epigastric pain being more severe to-day and manifestly increased on pressure, for the relief of which ten leeches were ordered to be immediately applied to the seat of pain.

Dec. 1. The epigastric pain became much less soon after the application of the leeches, but the pain in the head is much worse today; bowels open. Ten leeches to be applied to the temples, and the pills to be continued.

Dec. 4. The physician examined very carefully into all her symptoms, and the result of the inquiry was that the pain in the head is worse than it was a month since; the leeches now only give her temporary relief, whilst all her other symptoms remain unmitigated. The medicines were ordered to be continued, the leeches to be discontinued, and a seton made in the nape of the neck.

7. The pain in the head is very severe today; the seton has scarcely yet begun to discharge freely.

9. The pain in the head has progressively increased for several days past, and is now accompanied with violent throbbing of the temples; the pulse is 80; the skin rather hot; the tongue clean; the bowels open. Twelve leeches to be applied to the temples, and the other medicines to be persevered in.

11. The leeches have relieved her very much, and she feels generally better to-day.

Compound galbanum pill, five grains, three times daily.

13. The fits are diminishing in frequency, she has not had one since the 8th instant, which is a longer interval of relief from them than she has yet had. The seton now discharges freely, yet the headach is not diminished in frequency. The leeches and medicines are to be continued.

15. The bowels are open, and the headach relieved.

16. The pain in the head returned again this morning, with its old severity. The medicines to be continued as before, and

Blue pill, five grains, to be taken every night at bedtime.

18. Since the last report she has had four "lesser" fits, without any struggling or screaming; the pain in the head continues unabated in severity.

Pulvis dictamni comp., half a drachm, to be taken three times daily.

A *senna draught* to be taken early every other morning. The other medicines to be discontinued.

25. Violent pain in the head; the same in every other respect. Twelve leeches to be applied to the temples.

28. The pain in the head much relieved by the leeches; she has had no fits for the last week. She has a slight catarrh.

Solution of acet. of ammonia, 2 drachms;
Simple oxymel, 1 drachm;
Pimento water, 10 drachms. To be taken at bedtime.

30. Pain in the chest on inspiration; loss of voice. Twelve leeches to be applied immediately to the chest.

Jan. 1. Pain in the chest, and the loss of voice still continue; tongue clean and pale; skin warm; countenance free from anxiety; pulse frequent. These apparent inflammatory symptoms appear to be somewhat dependent on some undeveloped hysterical phenomena. The medicines were to be continued, and a blister applied to the chest.

6. Severe throbbing pain in the head; the power of voice returned. Twelve leeches to be applied to the temples.

8. She has not had any fit for a considerable time, and on a careful review of all her symptoms, they appear to be ameliorated in every respect, and she is on the whole much better than when she was admitted. The physician, taking all these circumstances into consideration, ordered her to be made an out-patient for a short time, previous to her leaving the hospital altogether.

The remedy which appears to have benefitted this poor girl, the pulvis dictamni co., is one of which we were not able to obtain any therapeutic account, for the same reasons as those which we appended to a former case.

EPILEPSY.

George Cowdry was admitted Oct. 25th. According to the statements of his friends he has had epileptic fits for seven months, and they recur almost regularly every two days. After each fit he has a feeling of numbness extending down the right leg, for about an hour, which goes off gradually and leaves him free from pain or uneasiness of any kind. Twelve months since he fell out of a gig, and remained insensible for some days afterwards. He has had a pretty severe fit to-day; the pulse is 80, full and hard; pupils dilated; bowels open. He was ordered—

Pulvis dictamni comp., 2 scruples, to be taken at bedtime. Broth-diet.

26. Severe and constant pain in the head. Ten leeches were ordered to be applied to the temples.

27. The head is much relieved by the leeches. He staggers a good deal in walking, and there is very acute pain on the summit of the scalp, in the situation of the anterior fontanelle. He occasionally complains of giddiness, and very correctly attributes all his present sufferings to the fall which he received about twelve months since.

30. He looks better in appearance than when he came in, and states that he has occasionally been ten days without any fit, but not since his admission. Ten leeches were ordered to be applied to the temples, and his medicines to be continued.

Nov. 1. He had two fits last night, but they were not of so violent a character as they were wont to be.

3. He has had one fit on each of the last two nights, but they have been milder in severity. The bowels are open. The medicines to be persevered in as before.

4. Had a fit last night which was succeeded by very severe headach, under which he is at present suffering, and which he attributes entirely to the fit.

6. He has severe headach to-day, from which he has suffered more or less severely since the fit on the 1st instant; he refers the seat of the pain to the upper and anterior part of the frontal region, where he received the injury in the fall. Ten leeches to be applied to the temples.

Blue pill, 5 grains, every night; and a *senna draught* to be taken early every other morning; the other medicines to be discontinued.

11. He has not had a fit for the last three days; the tongue is clean; bowels open; no pain in head, but some cutting pain in the chest, which is increased on inspiration. A blister to be applied to the chest.

13. The same pain in the head as before, and which not having subsided as much as the physician considered the remedies justified, he requested that the junior surgeon (Mr. Babington) might see him, which Mr. Babington accordingly did, but the result

of the consultation was in no way beneficial to the patient.

15. Much the same in every respect; some squill mixture was ordered to relieve the cough, which he said increased the disposition to headach.

17. He has had no fit since the last report, but complains that the headach and pain in the chest continue as severe as ever, and are much increased on his assuming the recumbent posture; bowels open; the diet was marked broth and rice pudding.

20. He complains of much pain in the chest which extends laterally from the sternum outwards on each side; it is increased on inspiration, and is accompanied by a short, dry, harassing cough; the respiratory murmur is feeble, and the intercostal spaces are tender on pressure; there is great giddiness on assuming the erect posture, but the stethoscope reveals no abnormal sound about the region of the heart. A blister was ordered to be applied to the chest.

23. The pain in the chest is better, but the giddiness is increased, and he fainted yesterday.

27. The cough is better, and he complains of the surface of the chest being very cold. A compound pitch plaster was ordered to the surface of the chilly part.

29. He left the hospital to-day, the epileptic fits being somewhat diminished in frequency and severity, but the pain in the head remaining almost as inveterate as ever.

PARALYSIS.

John Gunn, aged 43, a painter by trade, was admitted under the care of Dr. Seymour. For the last eight weeks past he has had palsy of one-half of the body. The attack came on very gradually, and was not preceded by any fit. The pulse is very small; the tongue white and moist; the bowels open, and the urine natural in every respect. He can walk with a stick, and has some motion of the arm of the affected side, which, however, is very imperfect. To be bled to twelve ounces; to have broth diet; a blister to be applied between the shoulder-blades; three grains of *calomel* every other night, and a *senna draught* early every other morning.

Nov. 11. He complains of severe pain and giddiness in the head, which obliges him to go to bed; the bowels are open; the pulse natural.

13. Has some incontinence of urine; ordered to be cupped at the back of the neck to twelve ounces, and to have

Tincture of cantharides, half a drachm;
Almond mixture, 3 ounces. To be taken three times daily.

15. A fresh attack of palsy this morning of the right side; pulse very weak; incontinence of urine. A blister to be applied behind each ear.

16. Right side much better; the left one perfectly paralysed still; extremely restless, and cannot sleep.

Acetate of morphia, ½ of a grain;
Vinegar, 3 minims;
Cinnamon-water, 10 drachms. To be taken at bedtime.

17. Better in many respects; he is able to retain his urine better; scarce any palsy remains of the right side; he slept also better last night. The sleeping draught to be repeated, and the dose of morphia to be increased to half a grain, and a senna draught to be taken early to-morrow morning.

20. He had a fit in the night of a somewhat epileptical character, as far as we could learn from the description given by the day-nurse, who got her account from the night-nurse. He has paraplegic palsy of the lower extremities, but he is perfectly able to use the arms. Extremely restless, so much so as to require the straight-waistcoat to confine him.

24. He is better in every respect, and is able to move the right leg more freely than he could; there is no pain in the head, and the bowels are well opened.

27. Pain in the head returned; his countenance is more anxious, and there is some slight wandering of the intellect. A blister was ordered between the scapulæ.

Dec. 2. Since the last report his mind has evidently become more deranged, and he has now many of the symptoms which go to make up a case of vicious idiotcy, in consequence of which his friends were requested to remove him from the hospital.

QUERY FOR PHRENOLOGISTS.

To the Editor of THE LANCET.

SIR:—It is a well-known fact, that several of the Indian tribes use various means to flatten the cranium of their children; this arises from their possessing as strange a notion of the constituents of beauty, as do those fine ladies who consider that ill health is preferable to large waists. As I think the above fact is opposed to the phrenological doctrine, I should feel obliged by any of your correspondents informing me whether the growth of the organs on the top of the head is prevented by the compression, and whether the growth of the organs round the base of the brain is accelerated thereby; for if the brain were a collection of organs (as phrenologists assume) the compression on the brain would prevent the development of the organs on the coronal surface, whereas the Indian tribes invariably manifest veneration. Yours,

R. TEMPLE SMITH.

March 5, 1839.

TESTS FOR THE ADULTERATION OF DRUGS.

To the Editor of THE LANCET.

SIR:—I am quite willing to admit that others may possess more wisdom, and may be less liable to err, than myself; but with all due deference to Mr. William Gallard, of Hampstead (see LANCET, March 9), I did not consider a Committee of the House of Commons on the *Poor-Law Amendment Act* an appropriate place for entering into a detail of the manipulations of chemical analyses with which every scientific chemist is as intimate as with his own name. After a very laborious and, I must confess, a very difficult examination of every variety of medical agent, I must caution all branches of the profession against the erroneous idea that mere testing will serve to detect adulterations, or that confounding earthy powders with crystalline precipitates will answer in such delicate investigations. It is absolutely necessary to *analyse*, and not merely to *test*, all reagents, as well as precipitates; it will not do to work with sulphuric acid containing sulphate of lead, or not to be aware of the various solubility of salts, all of which circumstances are sufficiently understood by the junior pupils in a scientific laboratory. Your obedient servant,

ROBERT D. THOMSON.

London, March 9, 1839.

ALBUMEN IN SERUM AND WHITE OF EGG.

To the Editor of THE LANCET.

SIR:—In the last lecture of M. Magendie, published in your valuable Journal of March 2, the learned lecturer alludes to some experiments to prove the difference of albumen in serum and in white of egg. Thus, serum and white of egg are both treated with potash, and the proof he alleges of the variety is, that serum gives no gelatinous mass, and that white of egg does. The reason of this is no variety in the albumen itself, but merely that the white of egg is nearly pure albumen, and contains but little water; whereas serum contains a large quantity of it, so that the compound of albumen and potash, formed by the mixture of serum and potash, is dissolved in the water already existing in the serum; whereas, when the albumen of egg and potash are mixed there is a gelatinous mass formed, on account of the absence of water to dissolve it.

In the experiment of injecting the albumen of egg into the veins of a dog, and the testing the serum of the blood of the dog with potash, no gelatinous mass was formed, so the lecturer concludes that the albumen is changed in properties, whereas it is merely the mixture of it with the water in the serum that causes the compound formed to be dissolved, and not, therefore, visible.

I am, Sir, yours, &c.

F. M.

March 6, 1839.

TO CORRESPONDENTS.

A Pupil and a Lover of Justice. The charge of the ill-treatment of Mr. W. by his colleagues in the school, should have been authenticated, and the facts stated without the assignment of motives.

A Twelve Year's Subscriber. Such a person is not a "legally qualified medical practitioner," and, therefore, is not entitled to receive the fee. This reply will probably serve as an answer to all the questions.

The letters of *Mr. Wardleworth*, *Mr. Field*, and *A Subscriber*, have been received.

Sir:—Will you be kind enough to say whether a licentiate of the Apothecaries' Company of London, and of the Faculty of Physicians and Surgeons of Glasgow, is eligible to hold the office of surgeon under the New Poor-Law Act?

*** He is.—ED. L.

W. N. W, Stratford-on-Avon. Yes; but not as an apothecary, unless he possess the London license.

We have been compelled, on account of our Index, to defer the insertion of numerous letters from correspondents.

END OF VOL. I.—1838-9.

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Lecture 2.—Emptiness of medical theories; physical nature of actions called vital; union of solids, liquids, and gases; mechanism of the movement of the fluids; effects of the motion of the blood; fluids indispensable to the reproduction of the blood; effects of abstinence from food; influence of respiration on the blood; physiology of thirst and suffocation; changes in the blood followed by lesions of organs; effects of bloodletting; œdema of the lungs produced by changes in the blood; blood of glandered animals, 73—76.
Lecture 3.—True method of studying medicine; pathology of typhus fever; clinical examination at the bedside; microscopic examination of the blood; properties of the clot and serum; phenomena of coagulation; passage of the blood through the capillary vessels; anatomical discoveries of Ruysch; analysis of the blood by Lecanu; properties of the fibrine; necessity of the blood being coagulable; differences of true and false pneumonia; pathology of acute rheumatism; agents which act on the fibrine, 105—109.
Lecture 4.—Facts illustrative of the circulation; effects of pressure on the passage of fluids; absurdity of medical terms; coagulating property of the blood; circumstances which influence this property; experiments with œnanthic ether; disease illustrated by physical phenomena; viscidity of the blood; effects of this property; effects of bloodletting on the blood; changes produced by increased or diminished viscidity of the blood; effects of prolonged inanition; globules of the blood; their different forms in different animals; two species of globules; dimensions of the corpuscula; chemical history of the blood, 137—143.
Lecture 5.—Asphyxia by the fumes of charcoal; effects of carbonic acid on the blood; phenomena arising from liquefaction of that fluid; modifications caused by changes of temperature; experiments of Hales; effects of cold on the circulation; action of increased temperature; experiments; application of the facts demonstrated to the treatment of cholera; causes of the bruit de diable; obstacles to investigation of the pathology of the blood; the phosphuretted fatty matter; condition of the fibrine in the serum, 169—176.
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Lecture 7.—Effects of increasing the mass of the blood; transfusion of blood; modes of performing this operation; effects of transfusion on the pulse; defects of medical education; effects of moral impressions on the circulation; sensibility of the eighth pair of nerves; influence of galvanism on the circulation; modifications produced by muscular movements; blood of an hysterical patient; the buffy coat of the blood; theory of Rasori; causes which determine the buffiness of the blood; properties of the fibrine; cicatrisation of tissues; constitutional treatment of wounds; relative proportions of the serum and clot; circumstances which increase the serum, 249—257.
Lecture 8.—Transfusion of the blood; purulent ophthalmia produced by this means; increased volume of fluid in the vessels; illustrative experiments; reinjection of arterial blood; reinjection of venous blood and its effects; coagulation of the vital fluid; novel facts established by experiment; action of the left ventricle of the heart; plasticity of arterial and venous blood; relative proportions of serum and clot; proportion of serosity greater in females; blood of a cancerous patient; specimen of blood from an anemic patient; means of arresting hæmorrhage, 281—289.
Lecture 9.—Equable pressure throughout the arterial system; theories of bloodletting; arrest of hæmorrhage by compression; influence of respiration on

arterial pressure; size of the arterial capillaries; circulation through the extreme vessels; causes of this circulation; peculiarities of the movement of the blood through the capillaries; adherence of the fluid to the walls of the vessels; the nature of the parietes of tubes also influences circulation; variation of pressure in veins; elastic action of the arteries; effects produced by variation in the quantity of serum; theories of inflammation; hypostatic pneumonia; imprisonment of the serum by the clot; treatment of hydrophobia; injection of serum into the veins, 361—370.

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FINIS.

London: Printed and Published by George Churchill, 40, Essex-street, Strand.

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